JUN 16 1927

See Yellow Section for Contents, Market Review

IRON TRADE REVIEW

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CLEVELAND, O., JUNE 16, 1927

The present-day Williams warehouse.

IN THIS ISSUE: The First Steel Ore Dock on the Great Lakes.

THE IRON TRADE REVIEW

A Weekly Journal Devoted to Iron and Steel Manufacture and to the Machinery, Metal-Working and Foundry Trades.

CLEVELAND, NOVEMBER 28, 1907.

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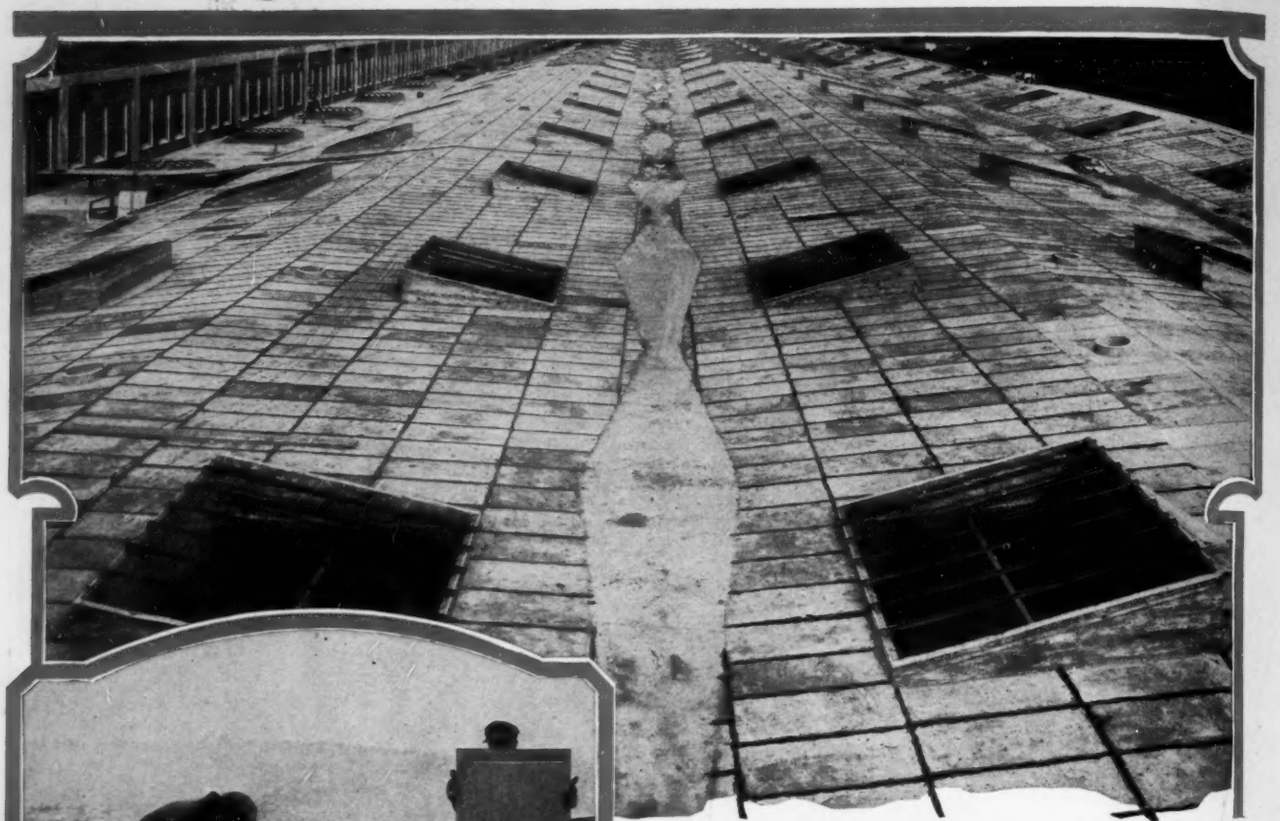

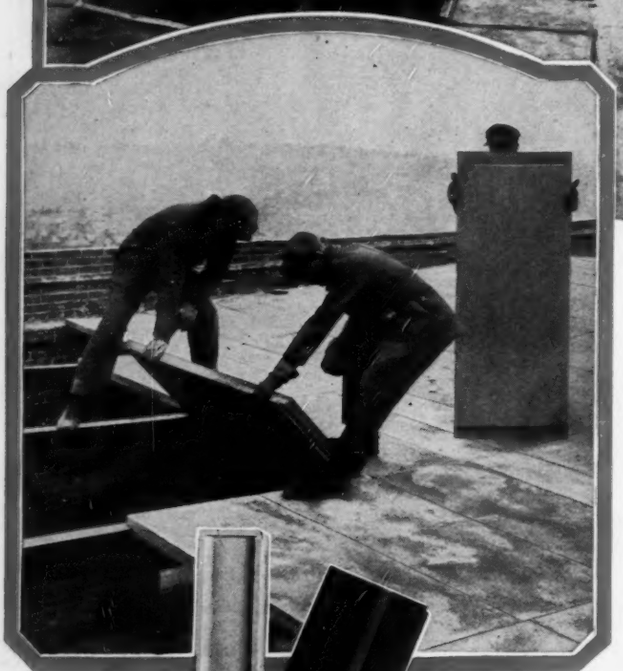

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New Era in Aviation—What Will It Mean to Industry?

Air Transportation—America's Youngest Industry—Certain to Grow Rapidly

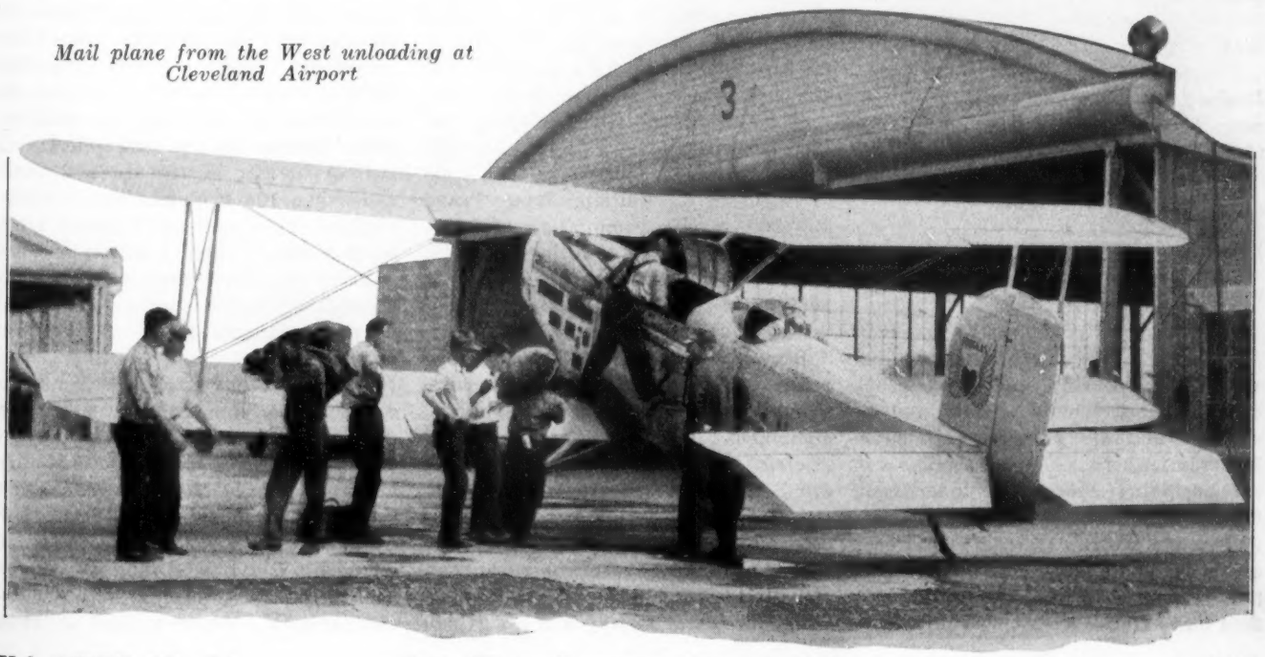
NOW, while the hearts of the peoples of two continents still are throbbing to the thrill of two successful transatlantic flights and the return of the incomparable Lindbergh, is an opportune time for American manufacturers to scrutinize the infant industry of air transportation.

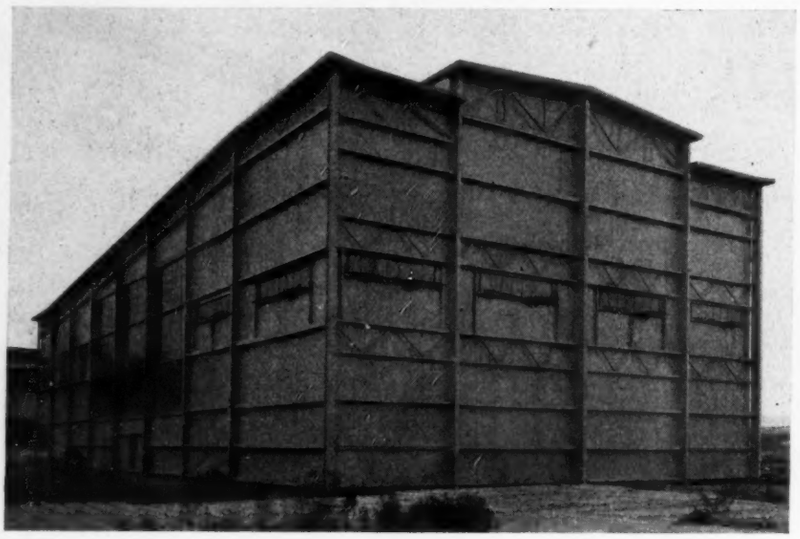
What is its status today and what are the prospects for its early development? To what extent will its probable growth in the next five or ten years affect the metal working industries? These are questions certain to arise during the present flare-up of enthusiasm for aviation.

The present scope of air transportation in the United States undoubtedly is greater than is realized by the average citizen. It is generally known that the government air mail service is extensive, but beyond this and the aviation activities of the army and navy, comparatively little is known of our air transport. Nor is there an accurate conception of the amount of equipment, service and supplies required to maintain aircraft on a commercial scale.

The airplane and the dirigible, like the automobile, require extensive facilities for operation and maintenance. The airport, with its gas and oil supplies, repair shops, hangars and miscellaneous services is to the aircraft what the garage and filling station are to the motor car. Moreover, interconnecting airways or chains of convenient airports with beacons for night flying are just as important to successful air

Mail plane from the West unloading at Cleveland Airport





"Wind tunnel," 90 x 166 feet, used in aviation experiments. Large buildings are required in the industry, and they take considerable structural steel

transportation as good roads are to the extensive use of land vehicles. The air industry, like that of the automobile, requires the backing of extensive research requiring experimental laboratories and shops. In fact, it employs practically all of the services that have grown up around the automobile industry and in addition must have personnel and equipment devoted to the training of pilots—a requisite foreign to the automobile business.

From the foregoing it is clear that an accurate picture of the air transportation industry must include not only the manufacturers of the planes, motors and accessories, but also the airports, airways, flying fields, air transport companies, instruction facilities, etc.

Figures from the *Aircraft Year Book* for 1927 and other sources seem to indicate that the number of planes in the United States on Dec. 31, 1926 was as follows:

United States army	647
United States navy	360
United States coast guard	5
United States air mail	98
Contract air mail service	103
Commercial service	969
Total	2,182

The army and navy activities involved considerable incidental property and equipment, including 60 stations and air fields, experimental laboratories, etc. The air mail service, including operations under contract employs 17 regular fields, 89 emergency fields, 17 radio stations, seven shops, 21 hangars, a general repair depot and warehouse, nine offices and extensive lighting equipment.

The total number of landing fields in the United States is 4000. These range from rather crude fields to extensive airports, such as that at Cleveland which is valued at $1,250,000.

Airways offer a new market for the metal industries. The principal elements of a well appointed airway are airports, intermediate landing fields every 25 miles apart, beacons spaced about 10 miles apart, weather reporting service involving radio and telegraph and radio or leader cable for directing naviation in fog or at night.

Already the demand for hangars has resulted in the standardization of types for airplanes. The Austin Co., Cleveland, through whose courtesy two of the accompanying illustrations are presented, has built hangers, experimental shops, a wind tunnel, several factories and other buildings for the aviation industry. The average hangar requires from 20 to 25 tons of steel. In addition, IRON TRADE REVIEW'S weekly compilation of structural steel contracts during the last year reveals single awards as high as 2000 tons for structures for the industry.

Boundary lighting of landing fields, route beacons, and radio and telegraphic service require considerable equipment. Aside from the gas and electric lamps and accessories, there are structural steel towers, and mounts and other structures fabricated by the metal industries. At the present time there are more than 600 electric and gas beacons on the transcontinental airway and about 400 more are authorized by current appropriations.

The trade directory of the aeronautics branch of the United States department of commerce lists the number of units serving air transportation as follows:

Number of Companies Engaged in Air Transportation Industry

(*Manufacturers unless otherwise designated*)

	Number
Accessories	9
Airplanes	76
Airplanes (distributors)	93
Aircraft armament	2
Cements and glue	2
Clothing	6
Dope	7
Engines	12
Engines (dealers)	22
Fabrics	4
Goggles	3
Hangars (fabricators)	14
Ignition equipment	16
Instruments	14
Lighter-than-air craft (builders)	5
Lighting equipment	18
Metal tubing	9
Metal wire	6
Mooring mast (fabricator)	1
Paints and varnishes	8
Parachutes	3
Propellers	11
Radiators	6
Rubber goods	4
Sirens	1
Spare parts, plane and engine	53
Spare parts (supply houses and jobbers)	36
Starters	3
Superchargers	3
Tie rods and fittings	2
Wheels	3
Wind indicators	12
Wood and plywood	7

Air Transportation Activities

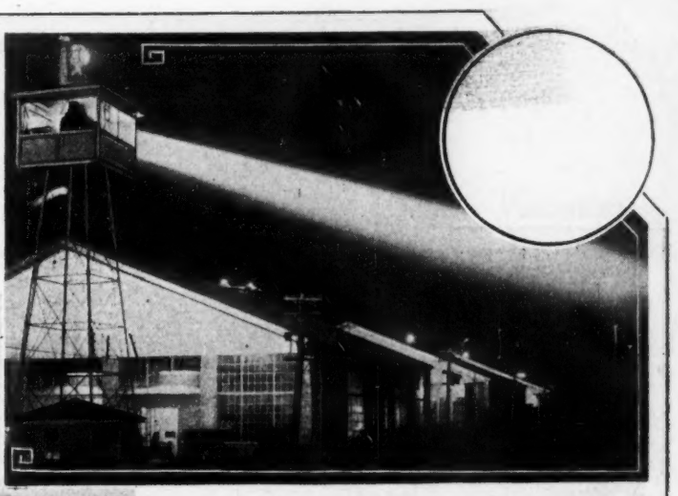
	Number
Airway operators (contract mail)	16
Air service operators*	420
Aerial advertising	34
Aeronautical consulting engineers	10
Exhibition flying	21
Instruction, flying and ground work	163
Instruction, home study courses in aeronautics	5
Instruction, university courses	5
Insurance	12
Photographing, maps, surveying	53
Servicing and repairs	33

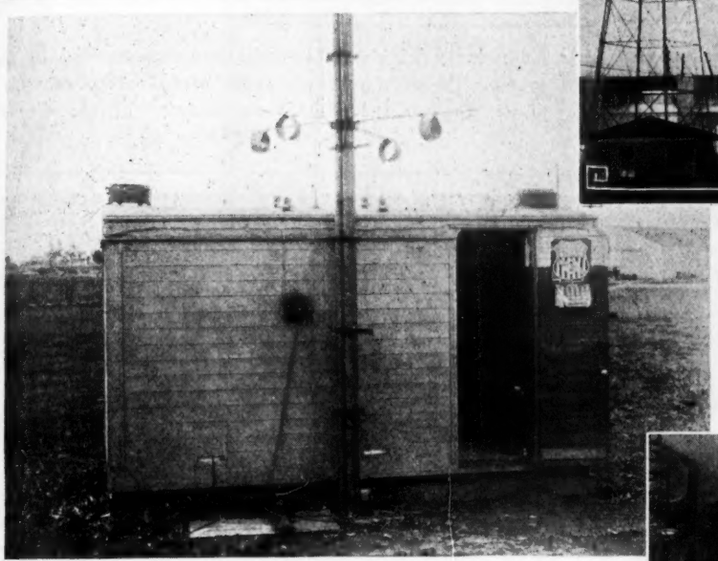
*From *Aircraft Year Book* for 1927.

The chief value of the foregoing list is that it shows the extent to which the idea of air transportation has penetrated the commercial fabric of the country. It indicates that even allowing for duplication there are practically 1000 companies in the United States directly engaged in some activity relating to aviation. IRON TRADE REVIEW showed in its leading article in the June 2 issue more than 100 manufacturers contributed to the success of Colonel Lindbergh's flight. This indicates the extensive secondary group which contributes material, parts or service to those directly identified with air transportation.

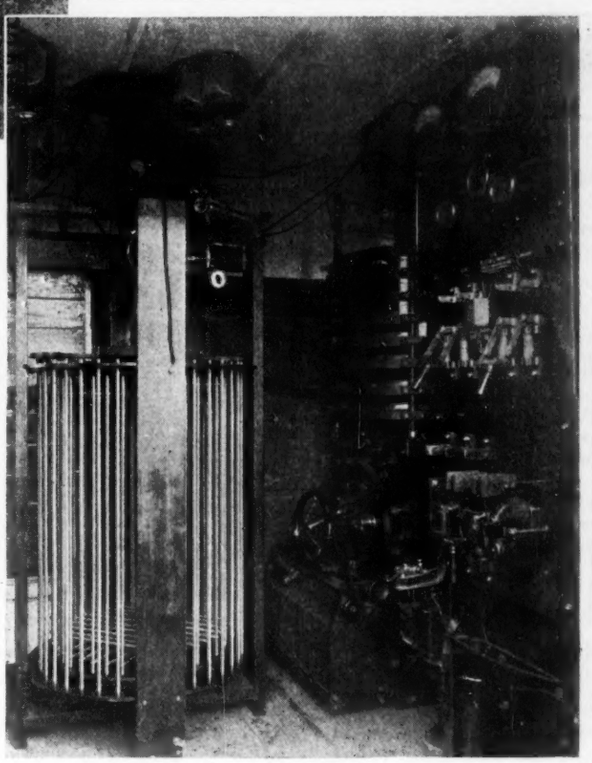
Unfortunately, however, the trade directory as summarized above does not give a true picture of the industry. Many of the units listed are engaged in experimental work or are operating on an uncertain basis. For instance, of the 76 manufacturers of airplanes, listed, less than 24 can be said to be in production on a commercial scale. About a third of these,

however, are operating rather extensive plants and may be said to be firmly intrenched in the business. Most of the dozen manufacturers of engines are well known companies with considerable experience. This is also true of most of the manufacturers of accessories, inasmuch as they have served the automobile industry during an extensive period.





program act, approved June 24, 1926, provides authority for procuring during a 5-year period beginning June 30, 1927 not to exceed 1614 airplanes to cost, including spare parts and equipment, not more than $85,000,000.



ONE of the important accessories of the flying enterprise is signaling equipment. Above is the revolving searchlight at the Chicago airport. At the right is the interior of the radio "hut," Wright field, Dayton, O., showing goniometer, an instrument used in sending directional radio signals. Exterior of hut also is illustrated, showing terminals of the 4-loop antenna.

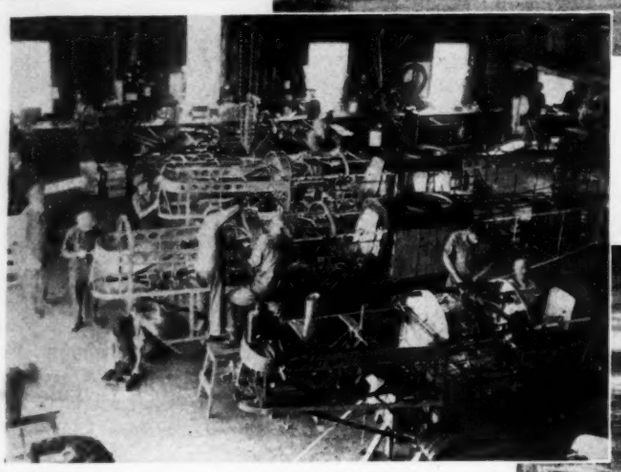
Production in 1925, according to the department of commerce, was 699 airplanes and seaplanes, compared with 587 in 1923 and 312 in 1921. Exports of aircraft in 1923 amounted to 85 planes and 855 airplane engines.

So much for the present status of air transportation. As to the probable expansion during the next five or ten years, we can only conjecture. Comparison of the early development of aircraft with that of the automobile is misleading. Elwood Haynes drove his first machine through the streets of Kokomo in 1894 and within three years there were a total of 2100 motor cars in the country. The Wright brothers made their first successful flight in 1903, yet now, 24 years later, there are only slightly more airplanes in service than there were automobiles three years after their invention. It is apparent, therefore, that we cannot hope to use the development of the automobile as a guide in estimating aviation's future.

Perhaps the best way to obtain a perspective of future possibilities is to examine some of the factors that will affect development in the near future. Federal legislation adopted in 1926 is sure to react favorably to the air industry. The air commerce act authorizes the designation of airways by the government, compels adherence to a single set of flying rules, authorizes federal lighting systems and the establishment and maintenance of emergency landing fields. It also authorizes transfer of the postal airways to the jurisdiction of the department of commerce. The act which was approved May 20, 1926 is virtually the legislative foundation for commercial aviation in America.

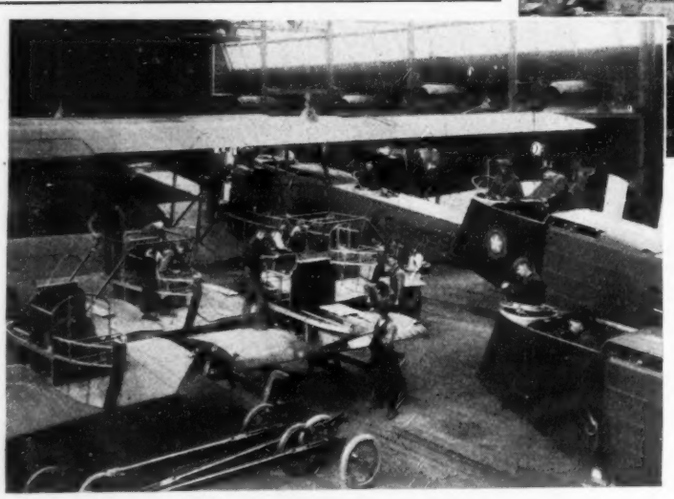
Other important legislation was that appropriating funds for the army and navy. The navy 5-year aviation During the fiscal year of 1932 and each succeeding year, the act authorizes the construction of not to exceed 333 planes at a maximum cost of $17,000,000. The appropriation is based on the belief that 1000 serviceable planes should be maintained as the future air equipment of the navy.

The army 5-year aviation program, as approved July 2, 1926, authorizes a considerable expansion in air personnel and the maintenance of 1600 serviceable airplanes, allowing re-



Four large airplane factories are represented in this group. Above is the Stout Metal Airplane Co.'s plant, Detroit. Below is an interior of the Curtiss plant, Buffalo

Above, the Douglass shops, Santa Monica, Calif., and below is view in Glen L. Martin plant, Cleveland



placement at the rate of about 400 planes a year. These appropriations insure expansion of the two arms of government service far beyond any previous peacetime limits.

A third branch of the government and the one which thus far has done more than any other for commercial aviation, the postoffice department, now is retiring from aeronautical operations. One by one the government air lines are being turned over to private operators and before the turn of the summer, the postoffice department will have relinquished all control of the mail lines. Herein lies the opportunity for commercial aviation in the United States. If the privately operated carriers can even approach the record made by the postoffice department, the growth of commercial aviation will be assured. The chief stumbling block to rapid commercial development during the past few years has been the lack of experience of those who have attempted to run air transport business. With 16 contract mail operators already in the field and with several others about to close contracts, the nucleus of capable air service operating companies soon will reach significant proportions.

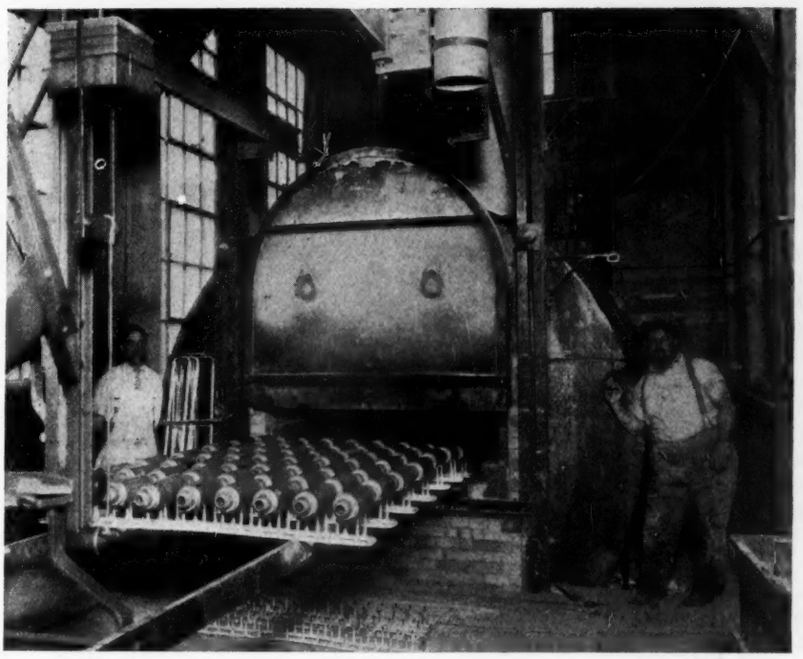
Still another factor is the attitude of the public. Thus far flying is considered a great risk by the average citizen. Frequent crashes of stunt fliers deflect attention of the reading public away from the remarkable records for safety that are being made by commercial flying services. Thanks to the unusual operating efficiency of the few well established companies, public fear is rapidly being dispelled. This is particularly true in localities where scheduled flights have been made day after day over a considerable period of time without accident. For instance, the Detroit-Grand Rapids Air Line, operated by Stout Air Services, Inc., carried 657 passengers during the first five months it was operated. Of the 191 trips scheduled, only six were defaulted on account of the weather and only two forced landings were made. No accidents of any kind occurred.

Multiplication of records of this kind through successful operation of carefully managed lines well distributed through the United States will rapidly build up public confidence to the point it has attained in Europe. Thus, instead of depending largely on government activities for its support and development, the infant industry of air transportation will more and more find itself concerned with civil operations.

In view of the favorable factors

(*Concluded on Page* 1538)

Ninety-second Article of This Series



Vacuum Bottles

Fig. 1 — Enamel finish both inside and outside of the bottles is baked at high temperature in long brick ovens

Large Uses of Steel in Small Ways

PRODUCTION of steel vacuum bottles has increased rapidly during the last few years so that the industry now has become a factor in the consumption of steel. Glass vacuum bottles are produced by the million, and many of these have sheet steel containers, although brass

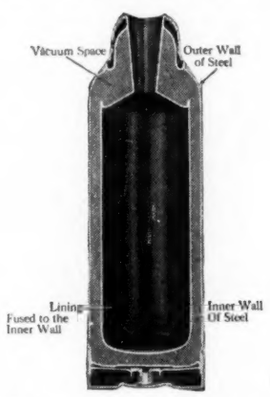


Fig. 2—The two shells forming the bottles are joined by electric welding

is more commonly used. One manufacturer of glass vacuum bottles has a production of about 10,000 a day. Nearly all of these are fitted in nickel plated brass containers. Each one, however, has a steel spring and other small steel parts. It is estimated by one manufacturer that 60,000 steel containers for glass vacuum bottles are produced each year, requiring about 25 tons of sheet steel.

The all steel vacuum bottle calls for more than 200 tons of steel strips, plates and bars, much of which is of special analysis. Steel bottles are made of two pressed shells electrically welded together with the air exhausted from between them. It was necessary to solve many difficult problems before placing the manufacture of these bottles on a production basis. However, the demand for a nonbreakable vacuum bottle was sufficiently great to warrant the use of highly specialized machinery. At present about 215 operations are necessary to produce each bottle.

Deep drawn and pressed steel parts are used. To make the inner shell satisfactory for carrying food, three coats of porcelain enamel are fused to the steel. The air is exhausted through a tube and plug device located at the bottom of the bottle, and when the proper amount of vacuum is reached, this is sealed off. Fig. 1 shows a load of two quart vacuum bottles about to enter the furnace to have the third coat of porcelain enamel fused on. This is done with the temperature at approximately 1800 degrees. The bottles are placed on a special rack and are carried into the furnace by a cantilever conveyor.

In addition to the steel bottles and the steel containers for glass bottles, many special lunch boxes and other containers sold with vacuum bottles are produced. If all of these were considered, and in addition the many nonvacuum insulated jars and bottles, the tonnage of steel would be increased greatly. One manufacturer estimates that steel consumption then would run well over 1000 tons a year.

Consumption of vacuum bottles is on the increase, aided in no small measure by their growing use as an accessory to the automobile for touring and outings.

THIS is the ninety-second of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the great American tonnage.

Among articles appearing every two weeks and not included in Vol I containing 51 separate descriptions are:

Tie Plates	*Camp Stoves*
Tacks	*Bottle Caps*
Knives and Forks	*Artificial Limbs*
Fence Posts	*Finger Nail Files*
Dental Drills	*Pencil Lead Boxes*
Rat Guards	*Small Steel Cases*
Overall Trimmings	*Lace Tips*
Shoe Steel	*Oil Cups*
Skates	*Ventilators*
Golf Clubs	*Toy Autos*
Burial Caskets	*Safes*
Scissors—Shears	*Steel Derricks*
Pistols	*Handle Cores*
Milk, Ice Cream Cans	*Typewriters*
Telephone Indices	*Steel Cross Arms*
Steel Heddles	*Ticket Punches*
Magazine Racks	*Wrenches*
Lawn Mowers	*Stamp Pads*
Shelter Houses	*Hair Clippers*
School Furniture	*Shuttles and Bobbins*

University Installs Combustion Tunnel for Study of Heat

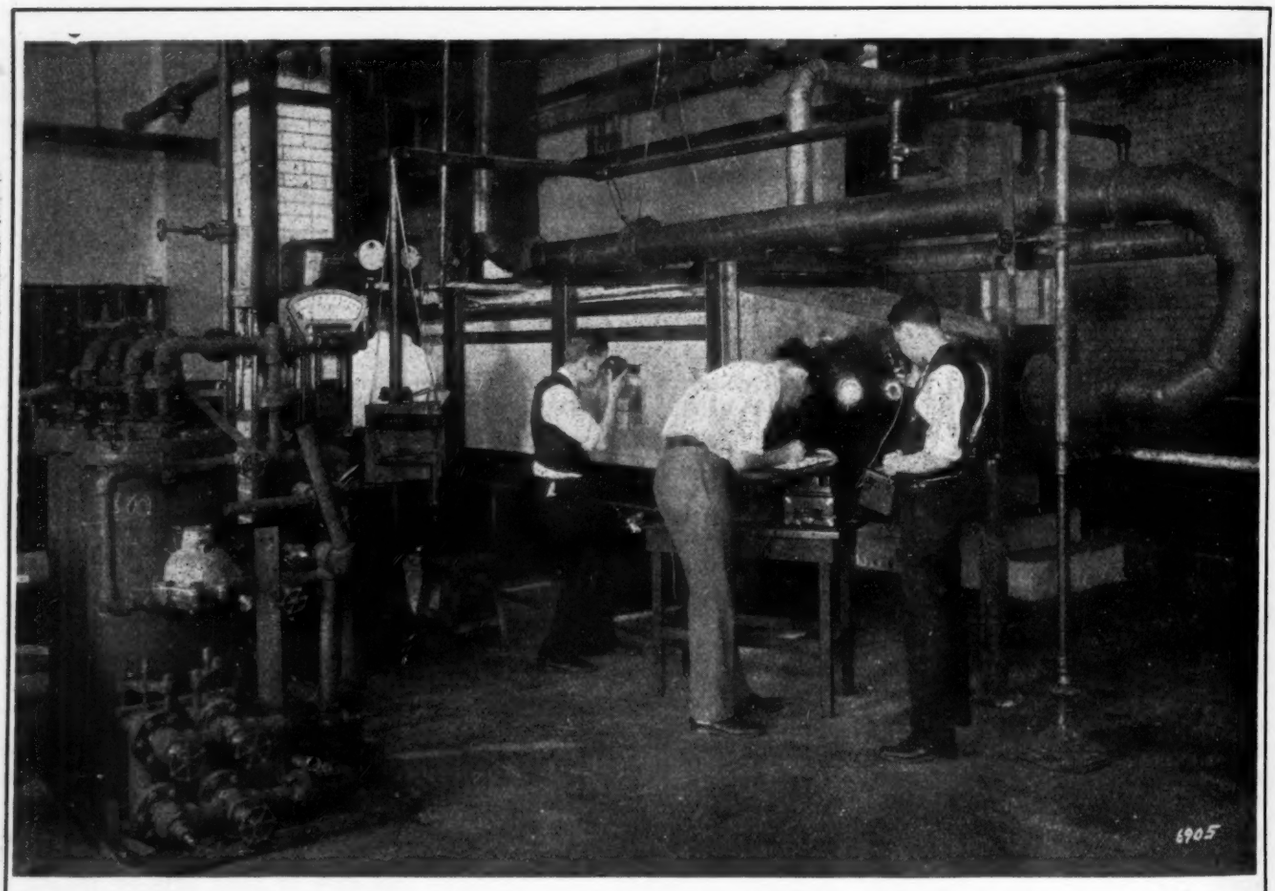
FOR use in connection with courses in heat and combustion engineering, the Carnegie Institute of Technology, Pittsburgh, recently installed a rather extensive set of equipment. During 1926-27, it was used in a course given to graduate students, most of them being combustion engineers of the Pittsburgh district. From now on, however, the apparatus will be used in connection with the new day course in heat engineering under the direction of Prof. W. Trinks.

The principal part of the equipment, shown in the accompanying illustration, consists of an oblong furnace to which various kinds of burners and combustion devices can be attached at one end. It is provided with observation holes through which flue gas samples can be taken and through which temperatures of the flame and of the furnace walls can be observed. Above the rear end of the tunnel there is a recuperator by means of which the combustion air can be preheated to about 800 degrees Fahr.

Piping and blast ducts are so arranged that the furnace can be supplied either with cold air or with hot air. In the former case, the hot air goes directly to the stack so as to protect the recuperator from being burned out. Another recuperator with "core busters" is being installed at the side of the furnace and is designed for preheating the air to a high temperature. Instruments have been provided for measuring temperatures and analyzing fuel as well as flue gases. All fuel and air quantities are being measured.

At present, natural gas serves as fuel, but pumping and heating equipmen is now being installed for using oil and tar as fuel. The laboratory also has a gas producer so that studies can be made with producer gas. Arrangements are being made to remove the "snout" or flared section which lies between the burner proper and the combustion tunnel and which is plainly visible at the right hand end of the illustration and to replace it either by ports of high temperature furnaces or else by grates and stokers for the purpose of studying the combustion of coal and of the gases rising from the fuel bed.

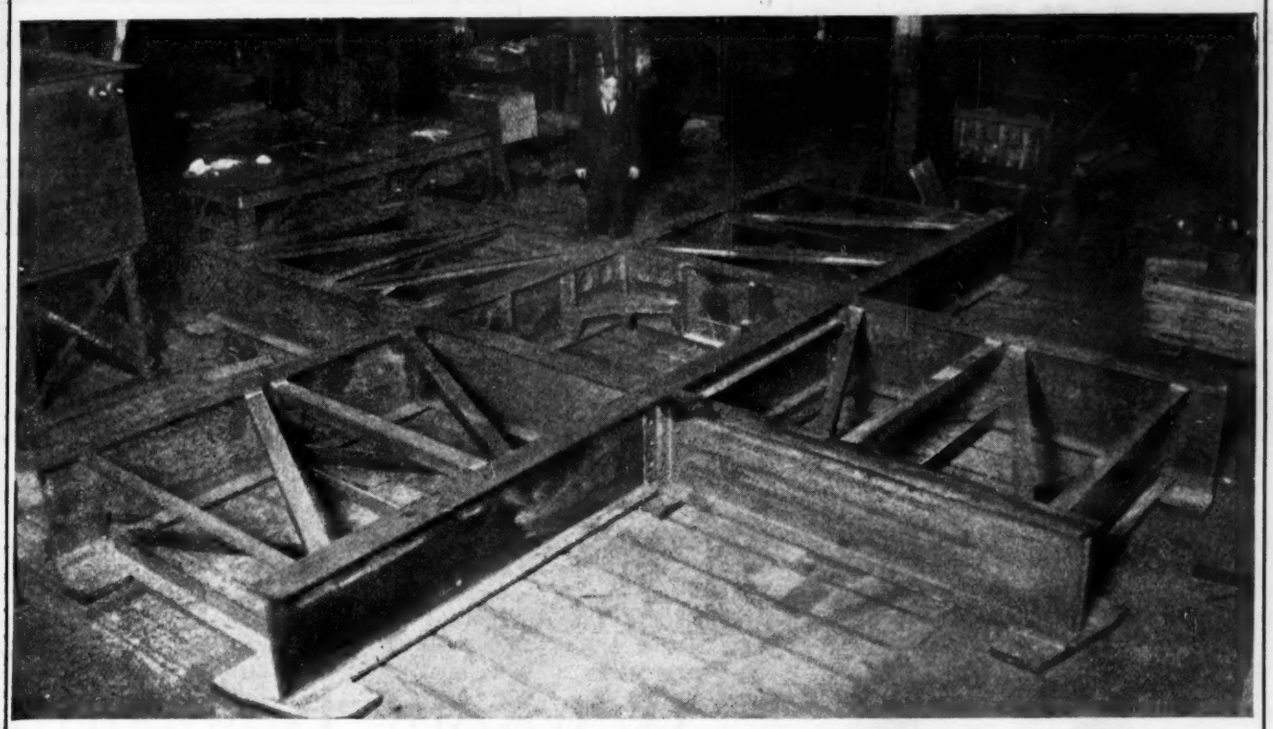
It is believed that this is the only combustion tunnel installed in any university in the United States. It should be particularly useful for testing the capacity of oil burners under different conditions and for similar work in addition to the teaching for which it is intended.



NEWLY INSTALLED COMBUSTION TUNNEL IN ONE OF THE LABORATORIES AT CARNEGIE INSTITUTE OF TECHNOLOGY

American Position on Manganese Reviewed

The United States, by far the largest producer of iron and steel, depends almost wholly upon foreign countries for the manganese which



IMMENSE LOWER BRACKET OF 40,000 KILOVOLT-AMPERE CONOWINGO GENERATOR WHICH HAS ALL JOINTS ELECTRICALLY ARC WELDED

is an essential in the industry, according to the bureau of mines, Washington. In 1925, the last year for which figures are available, 890,428 tons of high-grade manganese ore was used in the United States, 615,000 tons being imported during the year. The United States uses approximately 35 per cent of the world's annual output of high-grade manganese ores, but its contribution to that output is only 4 per cent. More than 92 per cent of the manganese now utilized goes into steel.

Manganese belongs to that group of elements which includes iron, cobalt, and nickel, states J. W. Furness, mining engineer, bureau of mines, in a report just issued. It is never found in the metallic state in nature, but generally occurs as oxide, silicate, or carbonate.

The world at present depends upon four great sources for its manganese: Russia, India, Brazil and the Gold Coast. In 1925, the world's production was approximately 2,570,000 tons, of which Russia produced 32 per cent; India 24 per cent; Brazil 12 per cent and the Gold Coast 13 per cent. The Tchiaturi deposit, in the province of Kutais, Republic of Georgia, south of the Caucasus, may be classed as the largest single deposit of manganese ores now known. It covers some 22 square miles, and estimates of the total commercial ore range from 44,000,000 to 200,000,000 tons.

LARGE GENERATOR BEARING BRACKET ARC WELDED

ELECTRIC arc welding now is being applied extensively to the construction of generators and motors by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. A most impressive example as to size is the 16,000-pounds lower bearing bracket for the large Conowingo waterwheel generators in process of construction. Each of these three 40,000-kilovolt-ampere vertical machines is 37 feet in diameter and weighs over a million pounds.

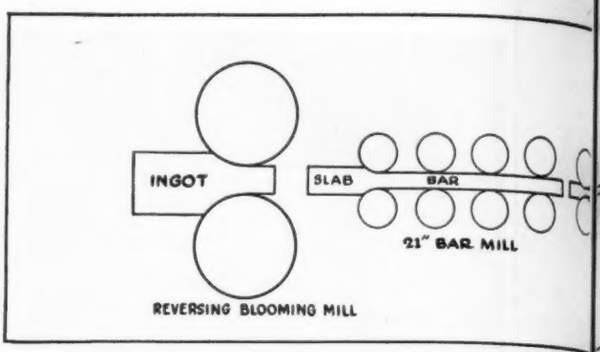
The lower bearing bracket, shown in the accompanying illustration, is a ponderous cross-shaped structure, 44.9 feet in diameter, with a 68-inch opening at the center for the shaft. This structure is built up of 24-inch standard girders with all joints arc welded. The heavy cast steel brackets about the center opening also are welded on, round holes being cut in them to give greater welding periphery. This is said to be one of the heaviest examples of welding of this sort to date.

Generators of this size are built at infrequent intervals, of course, but the Westinghouse company has embodied electric welding also as standard constructon in an extensive line of bedplates for motor-generators, ranging in size from 75 to 25,000-kilovolt-amperes; a machine of the latter size now being under way. As will be seen, welding permits a neat and strong design of bedplate, the heavy H-beams being ideally adapted for grouting to the foundation. In addition, some saving in weight over other types of construction is effected.

Makers of Concrete Machinery Merge

Consolidated Concrete Machinery Corp., Adrian, Mich., capitalized at $1,000,000, has been formed by merger of the Anchor Concrete Machinery Co. and Adrian Casting Co., Adrian, Mich.; Ideal Concrete Machinery Co., Cincinnati; Thomas W. Noble Co., Chicago; and Universal Tamping Machinery Co., Peoria, Ill. General offices will be maintained at Adrian and all present plants will be operated by the new organization. The Ideal plant will continue the manufacture of its line of equipment for cleaning, washing and tumbling metal parts.

CONTINUOUS rolling of sheets now is an established factor in the industry. This is the first of a series of articles describing the method and equipment used.

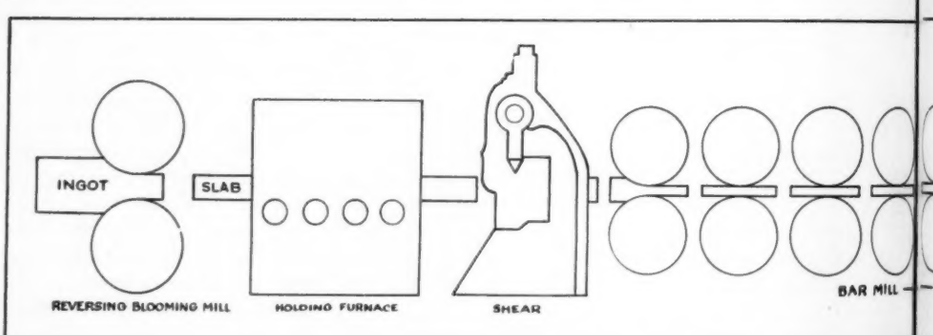


Schematic diagram showing the operation

Rolls Sheet Steel Direct from Ingot Without Reheating

Continuous Mill at Ashland, Ky., Is Based on a Rolling Principle Heretofore Undiscovered

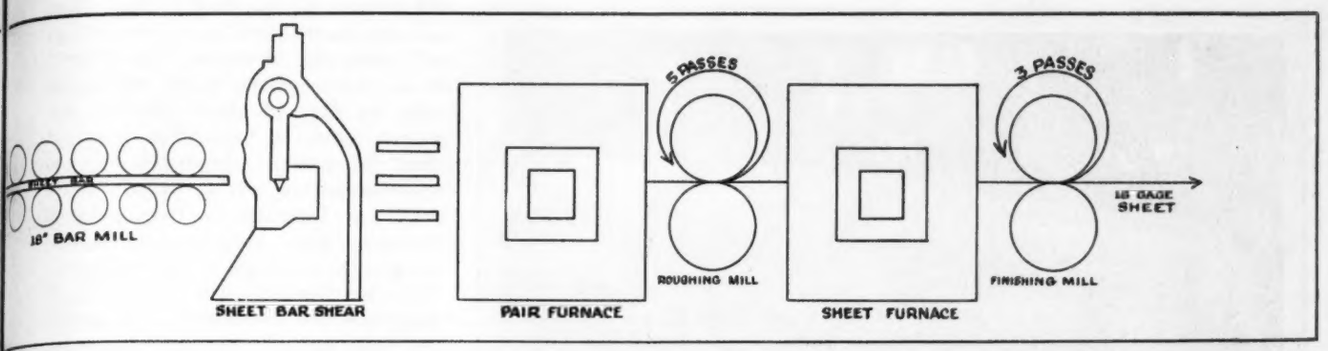
By John D. Knox



Schematic diagram showing stages through which an ingot

STANDING near the outskirts of Ashland, Ky., is a vast building on the property of the American Rolling Mill Co. More than three years now have passed since activity within the enclosure began and the men, who have passed in and out its doors have disclosed little information of the work being executed within its walls. Ingots have been entering the front end and leaving the finishing end in the form of sheets. But the average sheet worker passing the building never would have entertained the thought that inside, a hot mill train was scheduled. No smoke stacks topped with a damper are to be seen protruding through its roof. Yet within the four walls there is a sheet mill, not a sheet mill as ordinarily understood by the present generation but a mill that is stamped with distinction the world over. One that marks the furthermost leap in the progress made in the manufacture of sheets since the art of rolling this commodity was brought from Saxony to Wales and later from Wales to the United States; a mill, which at its current rate of output, will produce as much sheet tonnage annually as 50 ordinary hot sheet mills.

Furthermore, the sheets are produced mechanically. No manual labor is required. The process is continuous. And prehaps the most outstanding feature associated with the mill, a feature that is the most revolutionary in the annals of the industry, is that the *sheets up to 16 gage are rolled direct from an ingot without reheating.* Sheet manufacturers long associated with the industry will tell you that present day methods of rolling 20-gage sheets from the sheet bars, necessitates two heatings. The sheet bars first are heated and rolled in pairs; then after the roughing passes the temperature of the steel is raised for the second time. But here is a mill that ignores all precedent. A heated ingot runs the gamut of roll stands to 16 gage without any



through which an ingot passes in being reduced to a slab and finally to a 16-gage sheet on conventional hand mills

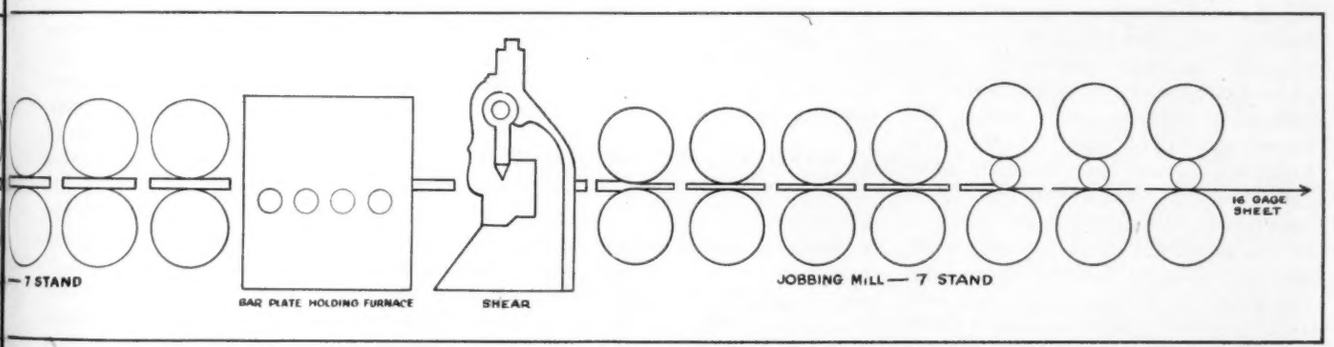
reheating and finally with one reheating and four continuous passes is brought to rest in the form of a 20-gage sheet. Nothing like it in the world. And yet, the success of the mill is not due to any one individual associated with the American Rolling Mill Co.; it is due to the co-ordination of ideas suggested and tried by a multitude of its employes who have cultivated that spirit of co-operation which saturates every department of the company.

The mill was not developed by accident. Every move was solved scientifically. Measurements were worked out to 0.00010-inch. Special micrometers had to be built to obtain the accuracy desired. And the principle, around which the mill is built, is not the principle to which roll turners adhere. Since the establishment of the sheet industry in this country the custom has been to turn roll is centered in a lathe; its mate is placed above in a crossed position, that is, one end extends slightly forward and the other end slightly backward. By this setup the lower roll is machined until that portion of the crossed surfaces coincide and the amount the rolls are crossed, that is, the amount they are trued off, depends upon the figures in possession of the roll turner who inherited them from past generations.

Hollow Rolls Prevent Shifting

When a set of rolls is turned with too much concavity the mill is said to be hollow. When a pack of sheets enters a pair of rolls hollow in the center the greatest pressure is exerted on its sides. This forces the steel toward the center of the pack and causes the opening between the rolls to become filled tightly. The steel being reduced under this condition responsible for the development of the mill at Ashland began to give thought to the continuous rolling of sheets. But when an attempt was made to learn why a roll turner crossed his rolls 3 inches, whether the diameter of the roll was 28 inches or whether it was 30 inches, no definite explanation was available. It was done because "that was the way to do it." Traditional rules had been passed from one roll turner to another. Apparently no answer to the question was necessary. The rolls delivered the sheet uniform so why spend time endeavoring to determine what actually happens while steel is in contact with the rolls.

Such an answer was not to be taken lightly by those associated with the American Rolling Mill Co. who had in mind the continuous method of rolling sheets. Too many details connected with the sheet rolling

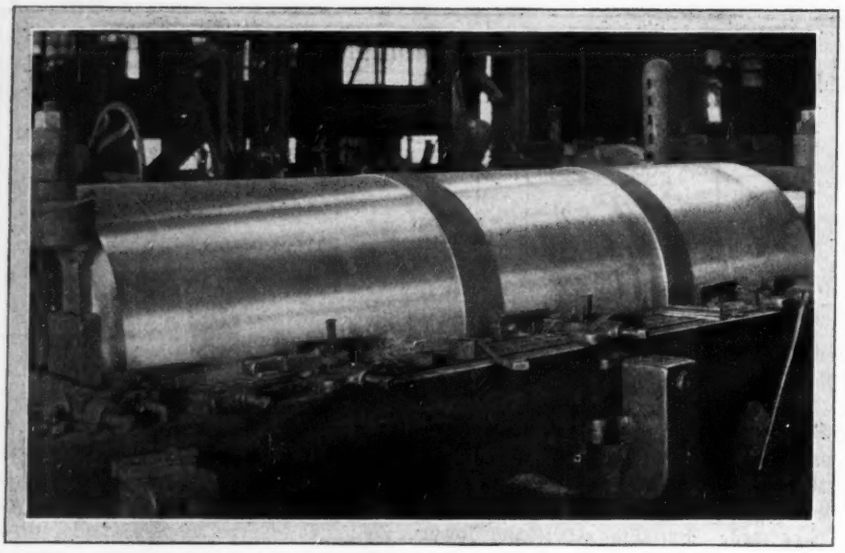


ases in being rolled to a slab on bloomer and finally to a 16-gage sheet on continuous installation at Ashland

one or both rolls in a lathe with the diameter at the center about 1/32-inch smaller than at the ends so that under working conditions their surfaces would be parallel. Otherwise, according to traditional opinion, it would be impossible to secure sheets of uniform thickness because the center of the rolls, being in contact with the hot sheets or packs, is subjected to a higher temperature than the ends and, hence, expand more.

In following out this procedure the will not shift in the rolls and as a result stock with fishtail ends and of uneven gage is produced. If, however, a set of rolls is not given sufficient concavity the mill is said to be full. Now when sheets are reduced by a set of rolls in this condition the greatest pressure is exerted in the middle. The steel is forced toward the sides of the pack which results in the production of stock with the edges thicker and the ends shorter than the middle.

All this was known when those process and with hot mill equipment were taken for granted since the Welsh system of rolling sheets was adopted as standard practice. No matter how insignificant these appeared on the surface the desire of the engineers and operators of the company was to learn why this was done or why that was done. Plausible explanations were not available in print nor was any one skilled in sheet mill practice found who could throw any light on the subject. The fundamentals involved in the rolling process had to



A lathe frequently is used for facing the hot mill rolls

be discovered and the control of these fundamentals invented. So the wheels of experimentation were set in motion and the surprises that laid in wait, as the various doors shielding the fundamentals were unlocked, form one of the most interesting backgrounds for a description of development work that has appeared in rolling mill literature in many years.

Research Work Conducted

The initial experiments date back to a few months before this country engaged in the late war. Sheet steel was gradually displacing woods in the manufacture of automobile bodies. At that time it was not unusual for body makers to apply 14 or more coats of paint with the customary rubbing and buffing between each application. Later body builders in order to reduce the number of coats of paint and the buffing operations demanded sheets with a highly finished surface. Sheetmakers did everything in their power to meet the demand. Wire brushes were used as a means of bettering the surface finish. Sheets even were planed. But despite all effort in this direction consumers became more critical in their requirements. They contended that certain surface imperfections were due to the sheets. Invariably the difficulty was traced back to the hot mill but when an investigation was made to determine what caused the trouble no explanation could be given.

Not only were sheet manufacturers faced with the problem of producing automobile body sheets, which with a few coats of enamel after forming, would meet demands but they also were confronted with the problem of producing material which could be drawn into intricate shapes without damaging the surface. Better hot rolled sheets and more hot rolled sheets were what the trade wanted, as all sheet manufacturers who were associated with the industry then will tell you.

About this time the government entered the war. Steel was needed for shells and as a result many of the sheet mills of the American Rolling Mill Co. were forced to close down that war demands might be fulfilled. The company long before allocation of steel became effective had been engaged in the manufacture of shells for the British government so that with comparative ease it swung all available capacity into shellmaking. And in making this class of war material the specifications involved cropping each ingot 25 per cent.

Background Was Appropriate

This, in substance, is the four fold interesting background: (1) the desire to make a scientific investigation to determine what happens when the steel is in contact with the hot mill rolls; (2) plenty of idle sheet mills available for determining the underlying principles of rolling sheets; (3) hot mill crews anxious to undertake the work; and, (4) an abundance of ingot crops, which when converted into sheet bars, could be used as the raw material and then returned to the open hearths. What could be more appropriate for determining scientifically the principles upon which the process of rolling steel sheets depend?

And so investigation was started and as it progressed infinitesimal measurements, running in 0.00010-inch, were found to have pronounced influence on the finished product. At the outset it was found that when a sheet passes between a pair of hot mill rolls, the conditions are different from those which exist when the rolls are free of steel. Rolling mill lexicon lacked a term that described these conditions adequately and so one was coined. It is called "active pass" and describes the space between the rolls while they are in engagement with the piece being reduced.

Furthermore, it was necessary to determine the temperature of revolving rolls and of the material being worked and to measure the size of rolls in figures heretofore considered insignificant. Up to that time the universal belief was that in order to successfully roll sheets the rolls, under working conditions, that is, while the piece is being reduced, had to be as nearly true cylinders as possible. On the contrary early investigation desclosed that rolls machined to true cylindrical form are not adapted to the rolling of wide sheets in thin gages.

Roll Contour Varied

Analysis of the Welsh system showed that the active passes were not always such that the rolls were truly cylindrical. Although the rolling of sheets, as practiced by hot mill crews, was performed on one set of rolls, which were supposed to give their particular shape to the piece or pack, the investigation conducted by the employes of the American Rolling Mill Co. demonstrated that the best controlled active passes were those in which the shape of the piece in the active pass was different than the shape of the piece before the pass. This discovery immediately led to that of a system of control; and to a large extent this control removed the limitations in width and thinness which marked the stopping place of continuous rolling processes of the past.

The basic principle, around which the continuous sheet mill at Ashland, Ky. is built, consists in controlling various factors which enter into the formation of the active pass so that a piece is rolled with a slight convexity and each successive active pass reduces the convexity and makes the surface of the piece more parallel. These factors are: 1.—the prepared contour of the rolls; 2.—the temperature of the rolls; 3.—the composition and springiness of the rolls; 4.—the spacing of the rolls, or "screw"; and 5.—the shape, composition and temperature of the piece.

The problem of using side guides to feed a thin, wide piece of metal into the gap of rolls is eliminated

by controlling these factors, because the rolling of slight convexity into the piece, which is preserved but reduced in each pass, forces the piece to travel through the roll stand in a straight line, as if in a closed pass. With true cylindrical active passes, the piece will tend to travel toward the roll necks in a manner which side guides are completely inadequate to control, because of the thin and wide character of the product being formed. In the rolling of narrow material on a strip mill, however, there is little difficulty in guiding the piece, but as the width of the sheet increases these difficulties become more pronounced.

Before describing the continuous sheet mill at Ashland and how the sheets are rolled a brief consideration of an ordinary sheetmaking plant perhaps will aid the reader to grasp the importance of the new development and to visualize the transitory period through which the industry now is passing. A single sheet mill consists of two stands of 2-high rolls. The sheet bars, which are the raw material, are broken down on one stand known as the roughing mill and the roughed-down sheets finished to the desired gage on the other stand, known as the finishing mill.

Hot mill assemblies in the older sheet plants in this country usually include from six to eight roughing and finishing stands arranged in train with their bottom rolls coupled together and driven through reduction gears. Modern construction, however, usually includes eight mills which are arranged in two groups of four mills, each group being driven through reduction gears by a motor. Only the bottom roll in each stand is actuated, each top roll revolving solely by friction with the lower roll or with the piece passing between.

A mechanical brake, commonly called a frictional drag in mill parlance, frequently is installed on the outer end of the bottom roll spindle of the end mill. The purpose of this drag is to take up the slack between the rolls, coupling boxes and spindles which otherwise causes backlash or fluctuating rotative speeds of individual rolls and frequently results in surface imperfections. The appliance is lined with wood and the amount of friction on the spindle is governed by the amount of tension placed on the heavy coil springs which hold the upper half in position.

Sheet mill roughing and finishing rolls usually range from 26 to 29 inches diameter and from 36 to 48 inches long. The necks of the lower rolls are journaled in permanent bearings in the housings or frames while those of the upper rolls are journaled in sliding bearings mounted in guides. The latter are connected to individual screws, 8 to 10 inches diameter, which terminate above the housings.

How Screws Are Operated

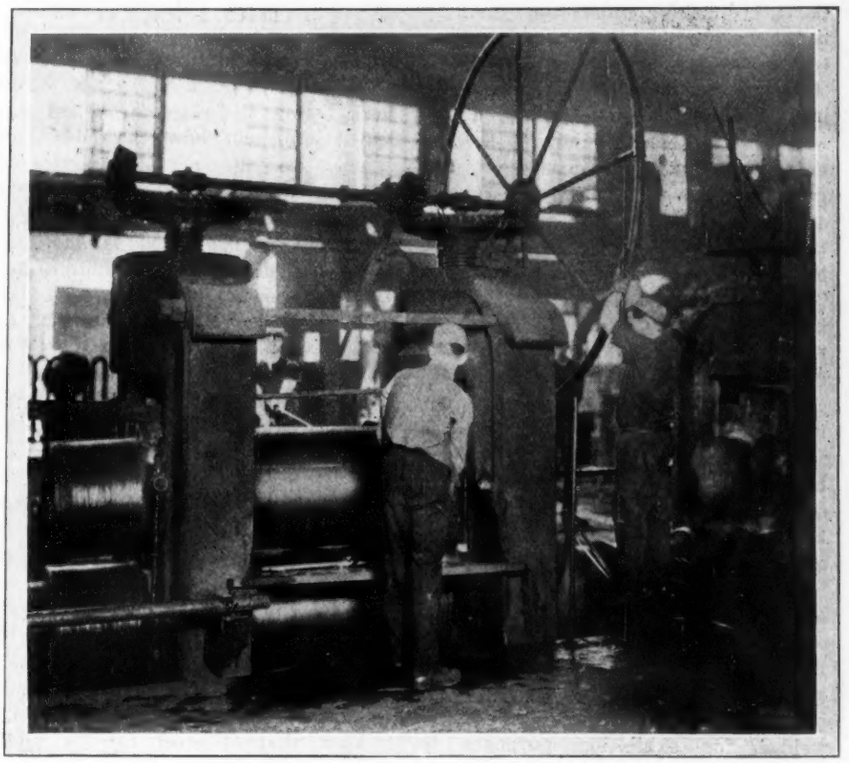
Mounted in a horizontal position on the upper end of each screw is a wheel with notches provided in its periphery. The top of each screw serves as a pivot for a lever which bends downward at the proper angle to engage with any particular notch, then outward a short distance to clear the housing and finally downward to within convenient reach of the workmen. The two levers on each stand of rolls are yoked together by a spanner bar so that moving either lever to the left decreases the gap between the rolls to conform to the amount of reduction desired.

As previously mentioned one or both rolls before being placed in their housings are either turned in a lathe or ground with the diameter at the center about 1/32-inch smaller than at the ends so that when they expand under working conditions their surfaces will be parallel. This was the universal practice until the theory was blasted by the Ashland development.

Sheets thicker than 1/8-inch seldom are rolled on a sheet mill but are reduced on what is known as a jobbing mill which includes a stand each of 2-high roughing and finishing rolls about 30 inches diameter and 60 inches long. A jobbing mill differs from a sheet mill in that the top roughing roll is driven through a stand of pinions and is elevated or lowered by a set of screwdowns. These must operate faster and through a larger range than those of a finishing mill and, hence, are actuated either by a large handwheel or by a motor rather than by the lever and spanner bar arrangement as on the finishing stand. The upper roughing roll of a jobbing mill is kept constantly in contact with its top bearing to prevent dropping on its mate after the piece passes between and as the feed screws are turned up the top roll also is elevated. Since slabs 2 inches and thicker are reduced on a jobbing mill it is obvious that if some means of balancing the top roll were not employed the lower roll would not withstand the continuous blows which otherwise would occur by the upper roll, weighing about 6 tons, dropping from a height of 2 inches or more.

(*Continued in next week's issue*)

Preliminary arrangements have been made for the fourth annual employe representation conference of the American Management association this year, to be held in Philadelphia, Dec. 1-2. The chairman of the program committee is C. S. Redding, Leeds & Northrup Co., Philadelphia.



Type of jobbing mill employed for rolling sheets by hand methods

Fig. 1—Welded neck before removal of gates and risers. Note how pods have been worn. Fig. 2—Wooden blocks in position prior to pouring the wax

Repairing Mill Rolls With Thermit

Easy Method Described for Building Up Worn Wabbler Ends—How Molds Are Made and Placed

IN MANY modern steel mills welding reclamation departments have been established which effect substantial savings. Table rolls, rolling mill housings, blooming engine parts, crankshfts, connecting rods, charging peels, pinion teeth, wabblers and other heavy sections are reclaimed by thermit welding, economically and quickly.

One of the most important uses of thermit in steel mill practice is the reclaiming of worn parts of wabbler ends of both rolls and pinions, and the addition of new necks. When the wabblers are too badly worn or broken. it is best to weld on a new neck. However, where the wear is not too great, the worn parts can be rebuilt with thermit steel with satisfactory results. A special thermit called "wabbler thermit" is used which produces a steel sufficiently hard and tough to withstand severe service. The weld can be made so accurately that no machining is necessary.

An example of this type of work is illustrated. The two operations of welding on a new neck and rebuilding the wabbler ends on the same roll is never done in actual practice. However, the roll was welded for exhibition purposes to demonstrate in the best manner possible how these two wellknown welding repairs are made in the steel mills. Fig. 1 shows the welded neck before the removal of the gate and risers, and how the pods have worn. In the actual practice of welding on a new neck a new part is cast slightly oversize and after the weld is completed is machined to proper diameter and alignment.

The wooden blocks around the pods in Fig. 2 are patterns cut exactly to fill the worn spaces. With these patterns in place the wabbler end is then surrounded with a piece of sheet iron, as in Fig. 3. Molten wax is then poured into the spaces between the wooden patterns and the remaining parts of the wabbler ends. The wooden patterns next are removed and a sand mold rammed in the usual way, preheated and poured. The pouring gates are connected at the bottom with a connecting ring which can be made out of wax so that the steel will flow uniformly to the various parts of the mold.

That thermit steel can be added so accurately no machining is necessary is demonstrated in Fig. 4, which shows an end view of the roll neck with gates and risers removed with no attempt made to machine the parts. The lower pod resting on the jack was not welded to better show by contrast the amount of metal added to build up the worn ends.

An alternative method which is preferred by several mills, is to make a mold for casting the wax out of a mixture of portland cement and plaster of paris. This is cast around the end of a wooden pattern corresponding to the roll to be repaired and is made in two parts. The plaster of paris mold is allowed to overlap the neck of the roll or pinion so that when placed in position on the worn wabbler end it practically centers itself.

When the mold of portland cement and plaster of paris is placed on the worn wabbler end, the intervening spaces or the worn spots are filled with molten wax in the same way as described for the wooden patterns. The wooden patterns or the plaster of paris molds can be used repeatedly when the same type of roll is under repair.

It is the usual practice for a mill to carry several different styles of patterns and molds in stock to fit the various wabbler ends which they have occasion to repair. No matter what

method is used the steel can be added so accurately that no machine work is required. It is not uncommon for wabbler ends repaired in this manner to outwear the original ends owing to the hardness of the special steel produced from wabbler thermit.

America Uses Most Tin, Produces Little

The United States, largest consumer of tin, produces from its own mines practically none of this essential metal, according to the bureau of mines, department of commerce. In 1925, 76,646 tons of metallic tin were imported, while 27,633 tons of secondary tin were recovered, making a total of 104,279 tons available for domestic consumption. In the same year the mines of the United States produced but 12.3 tons of tin.

The United States is not only the greatest consumer of metallic tin, taking upwards of 52 per cent of the world's production, but it is also the greatest manufacturer of tin products. The most important use of tin is in the manufacture of tin plate, the chief centers of which are in the United States and in southern Wales. In spite of the fact the United States produces virtually no tin, the American tin plate industry has prospered and today it leads the world, says the bureau. Present output is slightly more than 40,000,000 boxes a year while the Welsh production is approximately half as much. Prior to the War, Germany's productive capacity about equaled her needs. In India, Spain, Italy and Japan, large works have been put in operation.

Of the countries mentioned, Great Britain alone controls its source of tin, but Welsh production, due it is said to labor troubles and to tariffs, is now in a precarious condition. Normally the Welsh industry employed 30,000 persons, and consumed annually upward of 1,000,000 tons of steel.

Upward of 60 per cent of the tin used in the manufacture of tin and terne plate is utilized in the manufacture of tin cans or tin containers. The growth of the can making industry can be seen from the fact that at the close of the Civil War approximately 5,000,000 cans were utilized per annum. In 1925 more than 8,300,000,000 cans were manufactured.

"Handling" Accidents Are Most Frequent

State reports compiled by the bureau of labor statistics, Washington, indicate there were 10,537 fatal accidents and 1,687,957 nonfatal accidents in industrial operations in 1925. In 1924 the number of fatal accidents was 11,479 and nonfatal 1,666,522, while in 1920 the fatal accidents numbered 11,062 and nonfatal 136,837.

An effort was made to classify the available state data for 1920 and 1924 by principal groups. As some of the important industrial states do not classify their data by industry the comparison was inconclusive. As to causes of accidents the handling of tools and objects gave rise to the greatest number of accidents, there being 472,805 cases in the two periods, machinery coming next with a total of 294,951.

In its endeavor to encourage the development of accident rates the bureau has recently sought to utilize the data contained in the state accident reports in obtaining accident rates by relating such data to the employment data collected directly by the bureau. Ohio, Illinois and Minnesota were the only states for which information was available for 1924 and 1925. In 12 industries there was a decline in accident frequency from 1924 to 1925, the greatest being in the following industries: Automobiles, 58 per cent; agricultural implements and electrical machinery, each 49 per cent; and planing mills, 46 per cent. In six industries there was a rising frequency rate, the greatest increase being in the boot and shoe industry, 150 per cent, followed by those in the stove industry, 56 per cent, and in the flour industry, 42 per cent.

In accident severity also there was a decline in 12 industries, electrical machinery, 73 per cent; glass and stoves, each 59 per cent; and machine tools, 52 per cent, having the greatest decline. In six industries accident severity increased, the greatest increase being in structural iron work, 97 per cent; flour, 81 per cent, and agricultural implements, 74 per cent.

American Steel Co. of Indiana, Terre Haute, Ind., has increased its capital to $50,000.

Fig. 3—Sheet iron wrapped around pods and wax poured in worn spaces. Note clay luting at bottom of sheet iron.
Fig. 4—End view of three welded pods. One pod not welded, to show contrast

What Air Transportation Means To Industry

(*Concluded from Page* 1528)

mentioned it seems reasonable to expect the air industry in 1932 to be three to five times its present size.

That this is a conservative estimate is indicated by the airplane programs already assured. The army and navy appropriations previously mentioned account for 4717 planes to be built in five years or an average of 943 annually, which exceeds by 244 the total output of American airplane factories in 1926. About 400 new planes will be required for replacements in order to maintain air mail and commercial service at its present status. Therefore a production of about 1300 units per year is necessary, even if civil aviation does not expand beyond 1926 operations. Allowing for a reasonable increase in commercial air transportation, the foregoing estimate of an air industry in 1932 from three to five times the size of that in 1927 is not unduly optimistic.

Assuming this estimate is realized, and allowing for the usual rate of retirement of wornout and damaged planes, there would be from 7500 to 10,000 machines in service in 1932. Based on the experience of the government air mail service for 1926, operation of these planes would mean an annual expenditure of about $200,000,000.

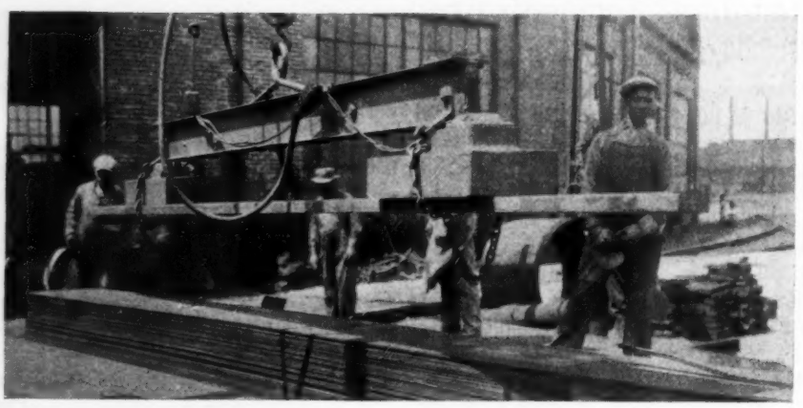
This would be apportioned about as follows:

1. Gasoline, oil and pilots' pay	$ 55,000,000
2. Maintenance of equipment	22,000,000
3. Maintenance of way (fields lights, communication and motor vehicles)	35,000,000
4. Executive overhead	10,000,000
5. Capital for new buildings, equipment and improvements	75,000,000
	$200,000,000

Although these figures manifestly are pure fabrications from experience that may be substantially altered before 1932, they are worthy of the attention of manufacturers. Perhaps 50 per cent of items 2, 3 and 5 would go to the metalworking industries.

It will pay to keep an eye on air transportation.

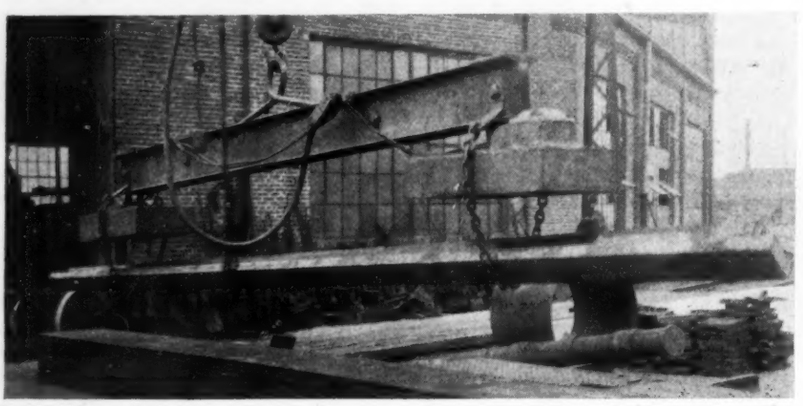
CHAINS CATCH MATERIAL IF MAGNETS FAIL



ONE of the major causes of injuries in all industries is the handling of materials.

The accompanying photographs illustrate how the Commonwealth Steel Co., Granite City, Ill., has obtained safe practice in the use of electromagnetic equipment for transporting steel plates and bars at its mill. The equipment consists of two magnets, suspended from a steel I-beam, 10 feet from center to center. Attached at the center is an electric hoist with 4000 pounds capacity, running on a monorail.

When the magnets were installed the men recognized a hazard in case the current for the magnets should be shut off without warning. A heavy chain was installed on each magnet and is looped around the material, to catch it if it falls.



Detroit Steel Show Will Feature Meetings

With four national technical societies convening in Detroit, Sept. 19-23, in connection with the national steel and machine tool exposition, the country will see the most representative gathering of the metal industry ever assembled. Some 25,000 manufacturing executives and scientists of the metalworking and metal treating from every state in the Union, Canada and many foreign countries are expected to attend.

The exposition, will cover 85,000 square feet and will include more than 300 companies demonstrating their equipment in operation. The American Society for Steel Treating, under whose auspices the exposition is to be conducted, will hold technical sessions on the five days. These sessions will cover the manufacture, use and treatment of iron and steel. The Institute of Metals division of the American Institute of Mining and Metallurgical Engineers will hold sessions during the same period on the manufacture, use and treatment of nonferrous metals.

The Society of Automotive Engineers has arranged a production meeting similar to those in Cleveland and Chicago the last two years. Technical papers will cover methods of production, uses of machinery, machine tools, inspection and treatment of materials. For the first time, the American Welding society will hold its meeting during the steel exposition and has arranged a comprehensive program on the latest developments and uses of welding and welding equipment.

Editorials

A Specification Looks Suspicious

ONE of the important results of the unusually successful convention of the American Foundrymen's association last week at Chicago was the crystalization in the minds of foundrymen of the unfairness of the tentative specifications for steel castings for high temperature work proposed for adoption by the American Society for Testing Materials.

The American Society for Testing Materials subcommittee has recommended specifications which ignore converter and crucible steel and impose chemical limitations as well as physical requirements. It is explained that the exclusion of converter and crucible steel is demanded by the consumer—particularly those represented by the National Electric Lamp association. It is difficult to believe that this organization would deliberately insist on the dropping of two grades of steel from the specification in order that one of the two remaining—electric steel—might gain a commercial advantage. Operators of electric steel foundries disclaim any part in the scheme; in fact they are opposing it. Manufacturers of electric furnaces also state they have had no hand in framing the objectionable code.

The specification will be presented for approval next week at the French Lick meeting of the American Society for Testing Materials. Regardless of the merits of the specification in any other respect, it should be turned down on the ground it is unfair in principle, is tainted with a hidden commercial motive, and if adopted would establish a harmful precedent. The American Society for Testing Materials cannot afford to allow this specification to be written in its book of standards—even as tentative for only a year.

Continuous Sheet Mill Now a Fact

THREE and one-half years ago an important producer of sheets completed the assembly of an unusual mill at Ashland, Ky. The mill was radically different in that it was based on a principle that flatly contradicted current ideas. As shown elsewhere in this issue, the new mill is one in which a 4-inch slab is advanced continuously to No. 16 gage without reheating or manual operation throughout numerous stands of rolls in tandem. The rough plate finally is brought to rest in the form of a No. 20-gage sheet, 45 inches wide and in commercial lengths.

The Ashland installation now has been in operation on a commercial scale long enough to prove that it is sound in principle, design and construction. Therefore, it may safely be said that the continuous sheet mill—once an alluring prospect but difficult of achievement—now is an established factor in the sheet industry.

Moreover, the success of the Ashland mill, coupled with the rapid progress being made in other directions to apply the continuous principle to operations which have long been performed by hand, is of great economic significance. It opens the way to a new line of engineering development which ultimately may change the aspect of the entire sheet industry.

Development of a continuous mill in the face of repeated failure on the part of sheet producers in the past required unusual courage. The American Rolling Mill Co. and all who have co-operated in the perfection of its Ashland mill to a practical operating basis have made a real contribution to the engineering of the sheet industry.

Styles Influence Steel Production

SINCE last December came to a close it has been known that the production of steel ingots and castings in 1926 constituted a new record, but exact figures have been lacking until last week when the American Iron and Steel institute announced official tabulations. In the year some 48,293,763 gross tons of ingots and castings was made, this being an increase of 6.4 per cent over the 1925 tonnage, which previously had represented a record.

Finished rolled forms of iron and steel in 1926 also made a new record in 1926, exceeding 35,000,000 tons for the first time in history. The gain over 1925, the previous record year, was 6.32 per cent. Detailed study of the figures indicates iron and steel products are subject to the same changes in popular demand as are articles of wearing apparel.

For instance, while rails, structural shapes, alloy steel ingots and castings, universal plates, black sheets, skelp, railroad track accessories, hot-rolled strip, tin plate, seamless tubes, galvanized sheets and formed products, and cast iron pipe and fittings made progressive gains in output, compared with 1925, progressive losses were made by wire rods, nail plate, merchant bars, hoops and cut nails. Changes in building construction, crating and packing are responsible for the reduced output of nails, while the grow-

ing use of pressed and formed products is promoting the decline of merchant bars and castings. Similarly, it is not difficult to point to the changing styles which are influencing production of all other commodities up or down. A study of the institute's complete report should provide for America's iron and steel industry an insight of the future.

Productivity Reaching Higher Records

SIGNIFICANT figures showing productivity of labor in American manufacturing industries are announced by the bureau of labor statistics. While the total number of wage earners decreased 6.7 per cent between 1919 and 1925, the quantity of manufactured goods produced increased 25 per cent, and the quantity per wage earner advanced 34 per cent. This record appears all the more remarkable when it is stated that the population of the United States in the same period gained 9.9 per cent, while the proportion of wage earners to population dropped 16.1 per cent.

Numerous attempts have been made to illustrate graphically the improved productivity in manufacturing industries. The bureau of labor used the year 1919 as a basing point for compilations because that year was a very active one, measured by employment. Comparisons are made of the conditions as they existed in 1919, 1921, 1923 and 1925. In not one of these last three years has the number of wage earners reached the level of 1919. Meanwhile, population has increased steadily, while the productivity in manufacturing has far outstripped it.

Fewer workers in manufacturing industries are providing for the needs of larger numbers of people; the contrast has become so pronounced in six years that it is interesting to consider how far the divergence will extend. Better manufacturing methods and facilities, and an enlightened viewpoint between employers and employes not only are solving difficulties of production, but are also setting remarkable examples of productivity.

New "Age of Copper" Is Dawning

MODERN industry as a user of copper is making the bronze age look like a piker. Last year the manufacture of the red metal into products in this country was sufficient to give each man, woman and child in the United States more than 15 pounds of copper. This is the highest figure ever attained by any metal other than iron in any country at any time. Of course no one knows just what the rate of copper production was in that early age when tools, weapons, utensils and many kinds of hardware were hammered out of pieces of this metal or its alloys. But it appears unlikely that man ever had anything like this addition in one year to his equipment.

It is remarkable that the growth of copper use should continue in an age that uses iron and steel in those places where bronze had its tonnage at the dawn of history. And still more remarkable is the figure of more than 15 pounds to a person as it follows other big years in the industry and means a total use by each person at any one time of hundreds of pounds of copper previously installed. The copper used in an automobile, like the steel and other metals, is scrapped after a few years and used over again, but the copper in power systems, roofs, plumbing and art works, remains in one use for years. Last year's "consumption" of copper was nearly twice the yearly average of 1912 to 1914.

What Our Readers Are Thinking

When Reciprocal Buying Fails

A STEEL plant signed a contract for the delivery to them of a large quantity of equipment, enough to completely equip a new plant which they were building. Very definite specifications covered what this equipment was to do and it was to be delivered as needed, so that manufacturing operations could expand as rapidly as the extension of the new plant would allow. In return, the steel plant was to receive a considerable share of the other concern's business. A fine arrangement, but here's what happened!

The deliveries that were to have been regulated according to the requirements of the steel plant, were as dependable as the advance dope on a horse race. Delay followed delay and orders for steel were cancelled while new business was lost. The equipment had to have expensive alterations after installation to secure the required results. Sufficient engineering data had not been obtained. Then, in a very short time, the results of poor design and close figuring began to show up.

The steel man received a share of the other man's business, all right, but what a small share it turned out to be. What could he expect? The other concern had made the same agreement with competitors of this first man so when the business was divided, each manufacturer's share was but a small percentage of the total.

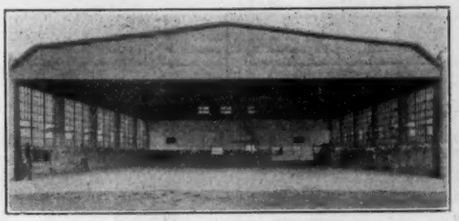
The steel plant has learned a lesson. They now avoid such agreements. When an item is up for purchase, the decision is made in favor of the manufacturer whose product is of the best design and most sturdily built, and who is most willing to carefully study the exact requirements of each application and engineer his equipment accordingly. In other words, they buy from the company who can best help them to make money. This buying policy is used by every purchasing agent and engineer who buys scientifically.—*Editorial in* Current News, *published by Electric Controller & Mfg. Co., Cleveland.*

The Reader's Page

Vol. LXXX, No. 24 IRON TRADE REVIEW June 16, 1927

Good Industrial and Technical Articles in Week's Features

WHICH city is the present premier automobile center of the world? Detroit? No. Flint, Mich., with a larger output than Detroit. Few people realize how the rise of General Motors, and slowing of the Ford plant have tipped the scales. Read about it on page 1570, in the midst of other interesting facts and gossip on the Detroit automobile situation, written by a staff representative. The article on page 1532 inaugurates a series on the rolling of sheet steel direct from the ingot, without reheating, an important development, at the new mill in Ashland, Ky. A new principle in rolling mill practice is applied. Many practical considerations are associated with the romance of flying; industries in general have a vital interest in the new development of air transportation. Ways in which they are affected are summed up in the article on page 1525.



How Air Transportation Is Developing Great New Industry. Page 1525.

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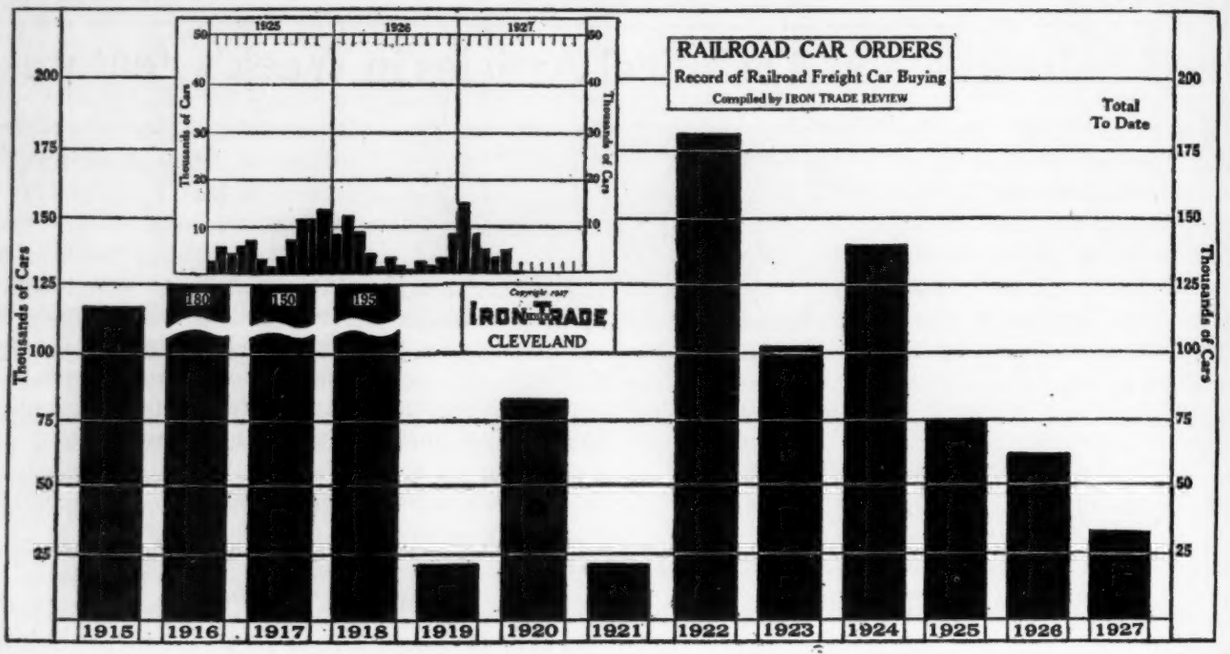
The Business Trend



Railroad Buying Constructive Influence

By JOHN W. HILL, Financial Editor

ONE of the most constructive of current industrial developments is found in the better buying of equipment by the railroads. During May the roads purchased 5100 freight cars. This compares with 3300 cars purchased in April and with 448 in May, 1926.

IN THE first five months of the year the roads bought 33,425 cars, only a little short of the 35,783 cars ordered in the corresponding period of 1926. But even more significant have been the substantial orders placed since the beginning of June by a number of roads. During the first week of the month these awards totaled nearly 6000 cars, or more than the 4285 awards for all of June, 1926.

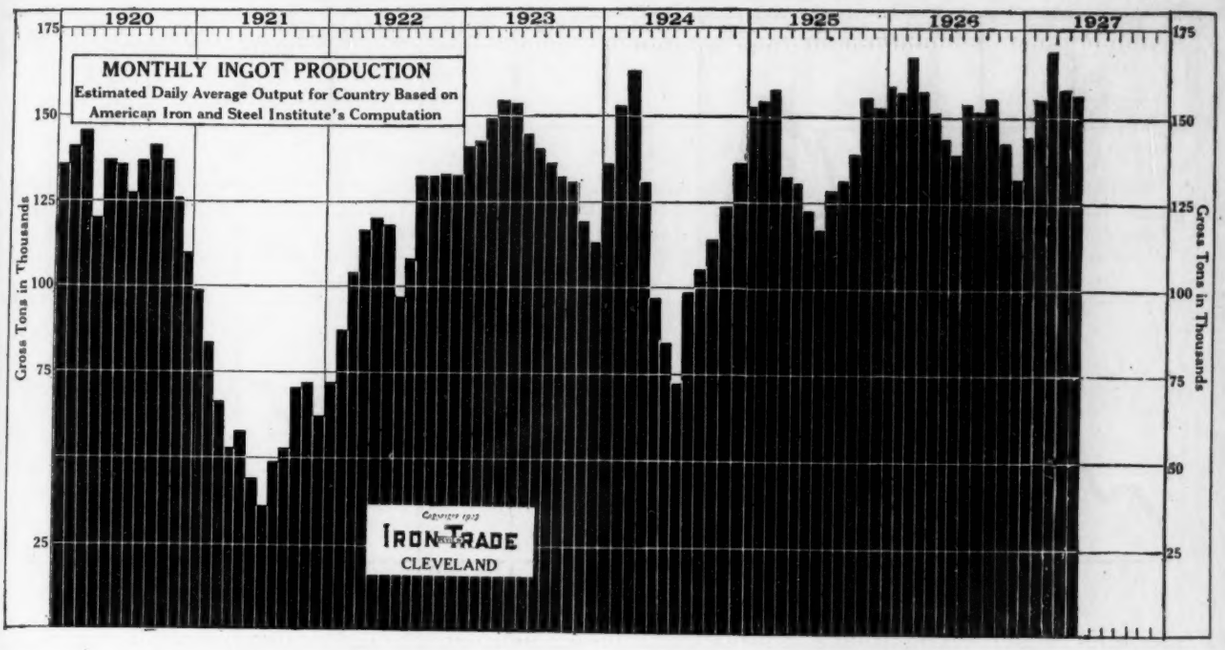
APPARENTLY a new era is dawning for the railroads. In keeping with the stupendous industrial expansion of the nation and the rise of great units of production, the railroads are moving steadily toward the goal of gigantic unified systems designed to match the needs of the country with adequate and economical transportation service. Important merger plans are now under way. When these plans finally are consummated, there undoubtedly will follow a period of important additions to the country's transportation equipment.

MEANWHILE the roads through extraordinary efficiency and through purchases of equipment are not falling behind the requirements of industry. The better financial position of the roads, the current ease of money and the low level of prices for steel make this a highly favorable time for railroads to make purchases. Moreover, traffic totals have climbed to a high level this year.

THE fact that car loadings have been running above 1,000,000 cars weekly at a time when the bituminous coal strike is in progress and a great devastating flood has been sweeping over more than half a dozen states in the lower Mississippi valley serves as an index of the vast quantity of goods being moved in the country.

WHILE industrial production is declining seasonally, it is notable that the recession in some important instances has been even less than the mild decline one year ago. Not only is the decline small, but the indications of certain important industries point to a vigorous upturn during the last half of 1927. This is particularly true of the automobile industry in which the introduction of new models and vigorous competition efforts are expected to have a stimulating influence.

The Business Trend

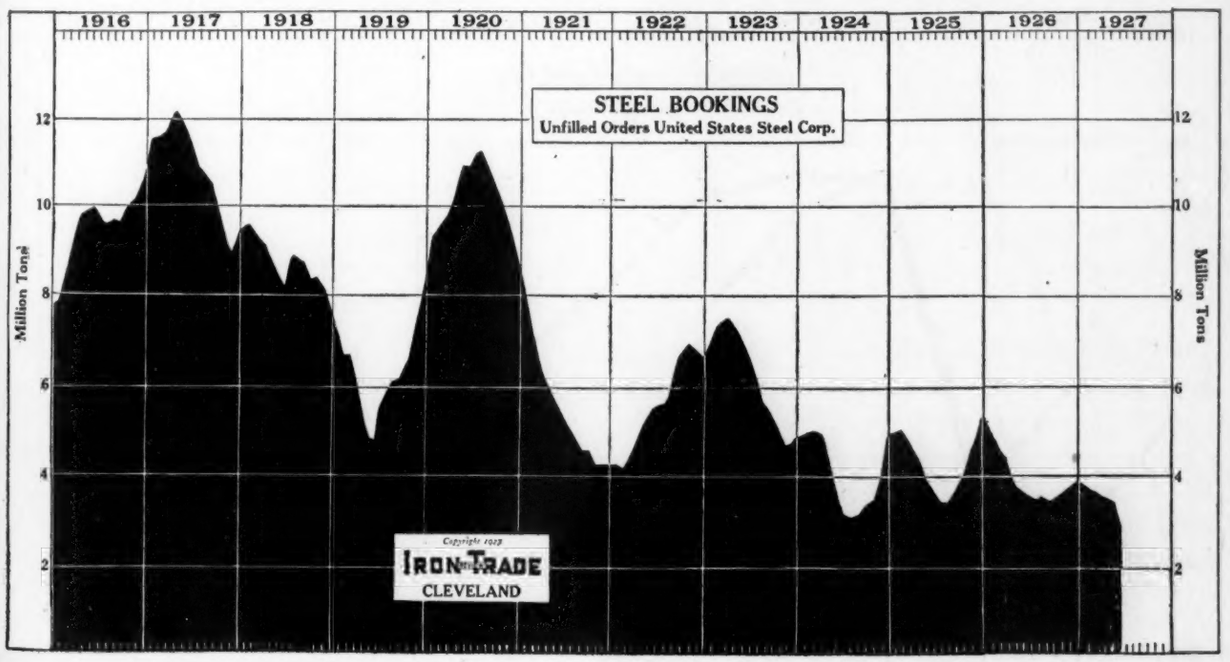


Ingot Production

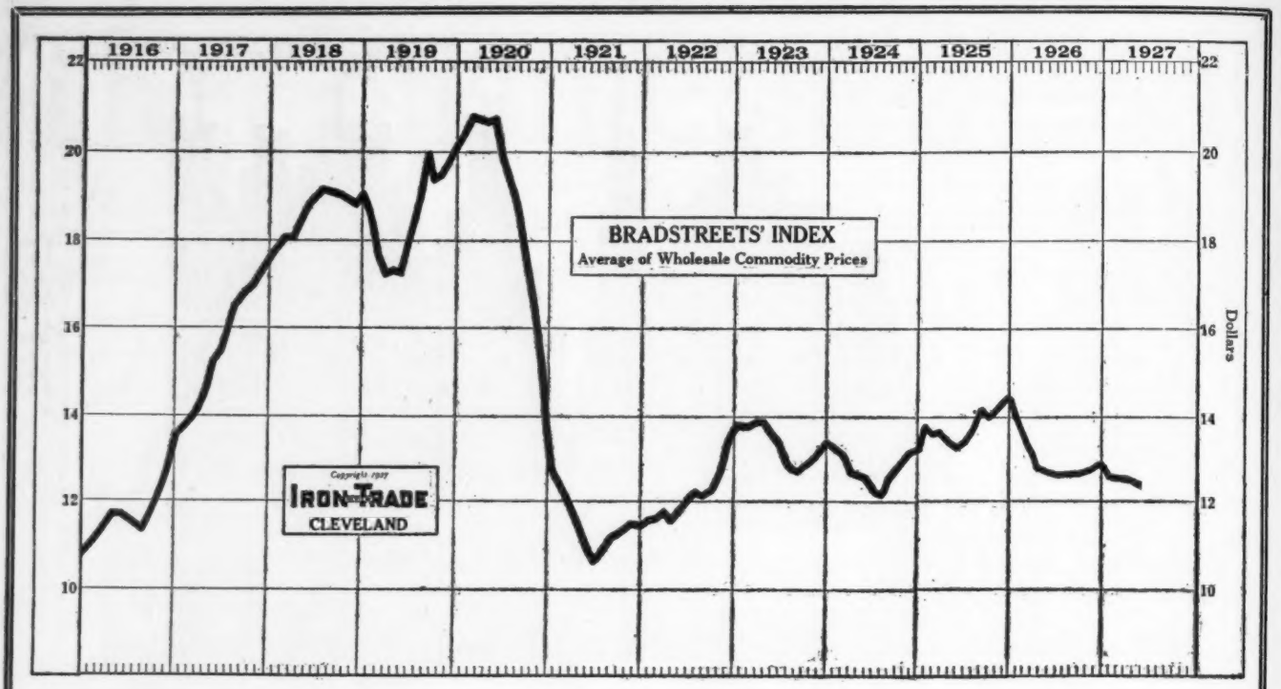
STEEL work operations in May continued to hold at a level above that of one year before. Although steel ingot production last month continued the decline started in April the daily average rate for the month was the highest for any May since 1923. The figure was 155,624 tons compared with 158,244 tons in April and 151,076 tons in May, 1926. Based on practical capacity the May output was 94.9 per cent of the ability of the mills to produce. Five months' production of 20,308,375 tons was only 111,000 tons below that for the same period of 1926.

Steel Bookings

UNFILLED orders of the United States Steel Corp. at the close of May totaled 3,050,941 tons. This was the lowest aggregate since Dec. 31, 1910. The decline in May was 405,191 tons and represents the largest monthly loss in orders since April, 1923. The thinness of order books is a reflection of hand-to-mouth buying prevailing in the steel industry rather than of adverse conditions in the trade. During the first five months of 1927 bookings have declined 910,000 tons against a drop of 1,380,000 tons in the same period of 1926.



The Business Trend

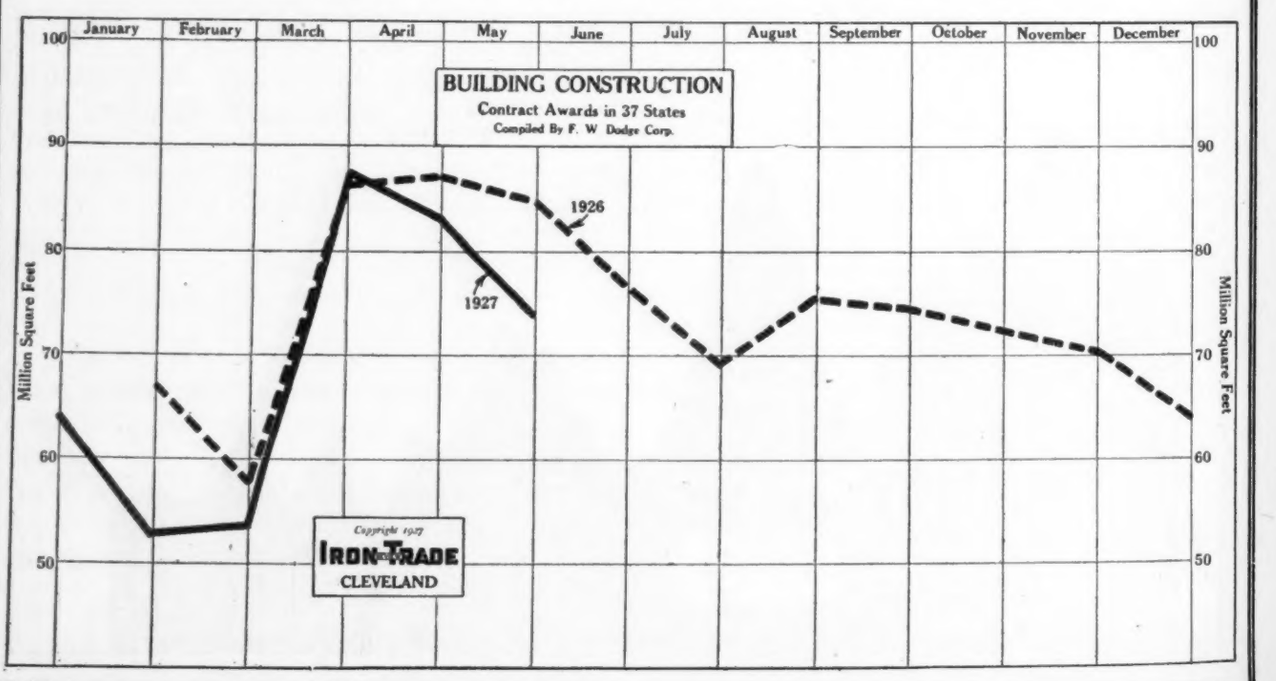


Bradstreet's Prices

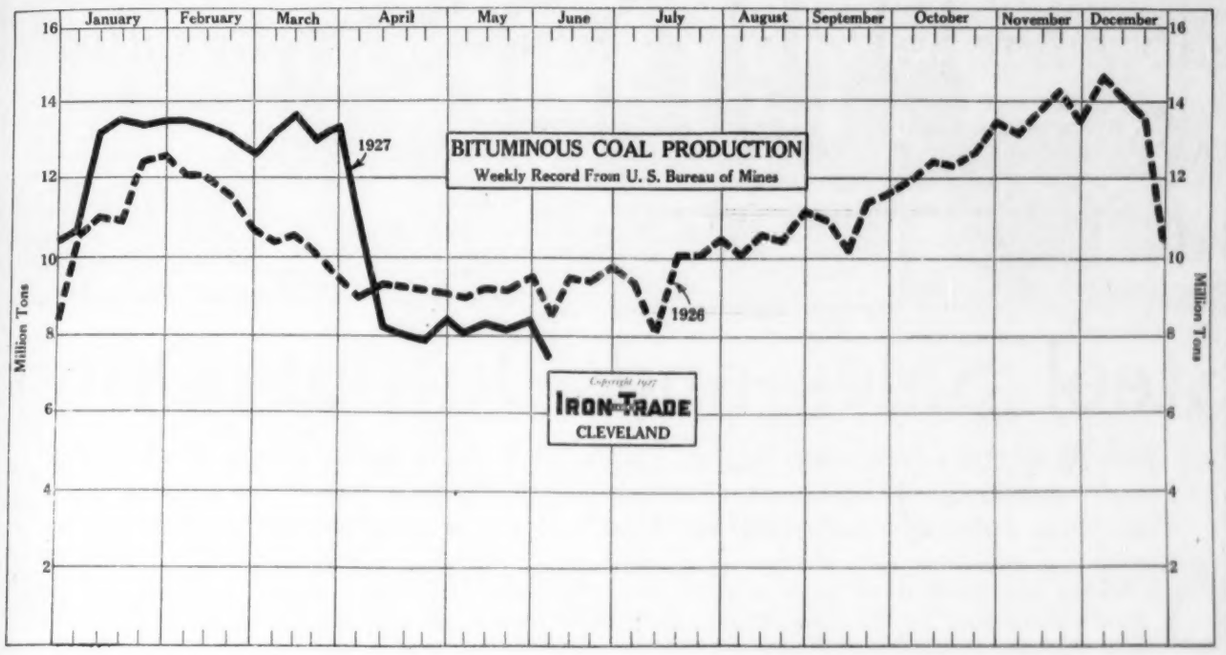
PRICES have been revealing irregular trends recently. Bradstreet's index number as of June 1 registered a decrease of 0.1 from May 1. Moreover it showed a decrease of 2.6 per cent from the level of one year ago. Compared with June 1, 1921 there is an increase of 17 per cent, while the decrease from the February, 1920 peak is 40 per cent. During May six groups of commodities declined and five advanced. The rise in agricultural prices has been the most significant price movement.

Building Construction

THE volume of contract awards for building construction declined in May. The grand total of awards in 37 northeastern states as compiled by the F. W. Dodge Corp. was 74,079,000 square feet. This compared with 87,891,000 square feet in April and with 84,937,000 square feet in May, 1927. Awards for industrial building amounted to 6,239,000 square feet compared with 6,447,000 square feet in April and 7,059,000 square feet in May, 1926. Residential building during May also declined.



The Business Trend

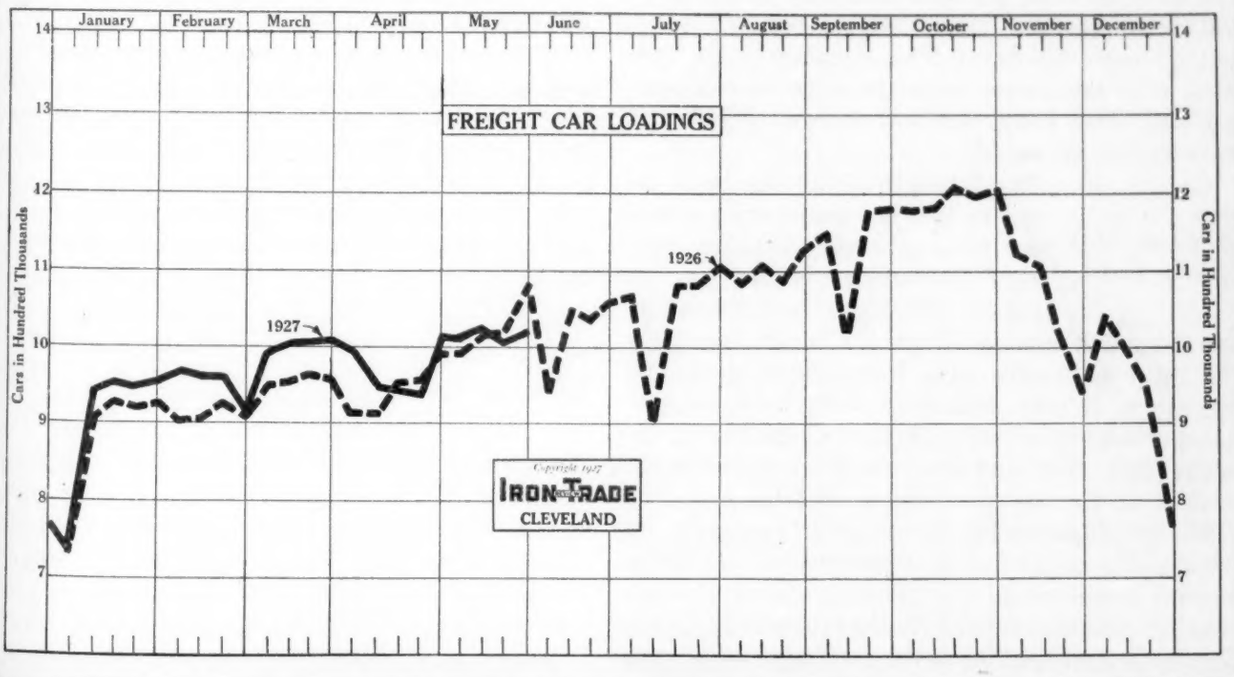


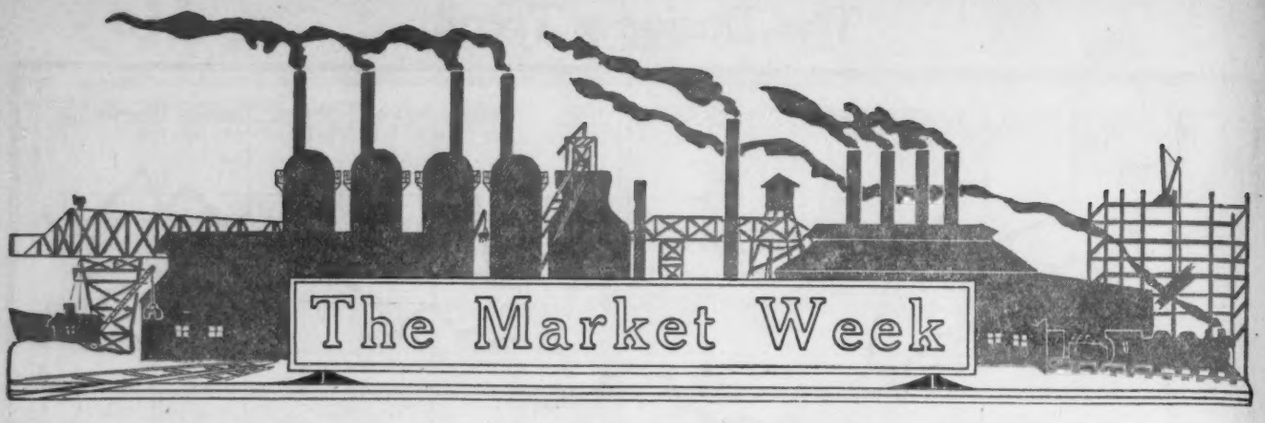
Coal Production

THE interruption of production occasioned by the celebration of Decoration day caused a sharp slump in the output of bituminous coal in the week ended June 4. The week's total is estimated at approximately 7,200,000 tons. This compares with 8,474,000 tons in the preceding week. Since the beginning of April, when the bituminous coal strike began, the output of soft coal has been running between 8,000,000 tons and 8,500,000 tons weekly. This is providing a large supply together with big stocks.

Car Loadings

MOVEMENTS of revenue freight continue at a high level. Car loadings for the week ending May 28 are reported at 1,026,397 an increase of 9,594 cars over the preceding week. This was a decrease of 54,389 cars under the corresponding week in 1926 but it was an increase of 113,310 cars over the corresponding week in 1925. Total loadings so far this year have been 21,352,000 cars, which is an increase over the total for the corresponding period of last year.





Steel Sales and Output Down

Mill Rates Are Curtailed as Buyers, Partly for Seasonal Reasons, Cut Their Commitments—Third Quarter Interest Mild—Pig Iron Weaker as Coke Strengthens—Sheet and Hot Strip Prices Holding Firmly

DEMAND for finished steel has shown further contraction in the past week. Summer dullness appears to be coming on, automotive schedules are lighter pending announcement of new models and tonnage involved in recent freight car orders has not yet been placed.

Steelworks operations have been synchronized with reduced bookings. Steel corporation subsidiaries have dropped enough capacity to reduce their steelmaking rate from 87 to about 80 per cent, while the average for the entire industry is down to 75 per cent. Even so, output of steel in June will probably approximate that of last June.

Interest in third quarter requirements, while broadening moderately, falls below expectations. Price weakness in heavy finished products has deterred some users from committing themselves. The carryover of pig iron into the new quarter will be fairly heavy, especially in the Pittsburgh and Chicago districts. The situation is in contrast with last June, when inquiries were mounting and some heavy finished lines at Pittsburgh were being advanced.

Sheets, Hot Strip Firm

The strength being displayed by sheets and hot rolled strip stands out in a generally weaker market. Deviations from the recently advanced sheet levels are the exception and bookings are increasing. For the third successive week independent sheet mill operations in the Mahoning valley are heavier. Some autobody sheet mills are operating at capacity this week and are scheduled similarly for next week, for the first time in 60 days.

Pig iron is not so highly competitive as steel but the disinterestedness of consumers over their third quarter requirements is having a deteriorating effect on prices. Blast furnace interests at Cleveland have conceded 50 cents, making foundry and malleable iron $19, delivered in the immediate Cleveland district. Prices in nearby districts are similarly affected. Malleable iron in the Mahoning valley is off 50 cents, to $18 to $18.50.

Tendency In Coke Is Up

Curtailed production of beehive coke continues to strengthen the hands of producers and the bottom of the spot furnace market is approaching $3. Inquiry for third quarter is coming out more rapidly but consumers hesitate to pay the $3.25 to $3.50 asked. One inquiry is for 13,000 tons monthly; another involves 10,000 tons for shipment to July 20.

Makers of rivets contemplate asking 3.00c, Pittsburgh and Cleveland, an advance of $5 per ton, on third quarter business and a proportionate advance on small rivets. Bolt and nutmakers are beginning to solicit third quarter contracts on the current basis of 70 off list.

A Milwaukee interest is reported to have been awarded 300 miles of 22-inch line pipe, proposing to bend skelp cold and electric weld the seam. Cast iron pipe at Birmingham is down to a range of $34 to $35 for sizes 6 inches and over. Detroit has rejected the low French bid on 3000 tons of 36-inch cast iron pipe and has placed the business with a domestic maker.

Huge Bridge Tonnage Due

From 125,000 to 136,000 tons of material will be required for the New York-New Jersey suspension bridge, bids on which are slated to be asked shortly. Although no large awards developed, the aggregate of moderate and small size structural work placed in the past week brought the total to 35,900 tons, exceeding both the seasonal average and the corresponding week of last year. Reinforcing concrete bar awards, headed by a contract for 4000 tons for a warehouse at Minneapolis, totaled 8780 tons and

The Market Section

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	June 15, 1927	May, 1927	Mar., 1927	June 1926
PIG IRON				
Bessemer, valley, del., Pittsburgh	$20.76	20.86	21.16	20.76
Basic, valley	18.00	18.10	18.50	17.75
Basic, eastern del., eastern Pa.	20.75	20.75	21.00	21.75
*No. 2 foundry, del., Pittsburgh	20.26	20.26	20.16	19.76
No. 2 foundry, Chicago	20.00	20.00	20.00	21.10
*Southern No. 2, Birmingham	18.00	18.00	18.00	21.00
*Southern Ohio, No. 2 Ironton	20.00	20.00	20.00	19.50
**No. 2X, Virginia furnace	22.00	22.00	22.00	23.00
**No. 2X, eastern, del. Phila.	22.26	22.26	22.26	22.76
Malleable, valley	18.50	18.50	18.40	18.00
Malleable, Chicago	20.00	20.00	20.00	21.10
Lake Superior charcoal, del. Chicago	27.04	27.04	27.04	29.04
Gray forge, val., del., Pittsburgh	19.76	19.76	19.66	19.26
Ferronmanganese, del., Pittsburgh	94.79	98.54	104.79	92.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.90	2.80	3.30	2.70
Connellsville, foundry, ovens	4.00	3.80	4.15	3.75
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	33.50	34.00	35.00	36.00
Sheet bars, open-hearth, Pittsburgh	33.50	33.75	34.00	36.00
Billets, open-hearth, Pittsburgh	33.00	33.00	33.60	35.00
Wire rods, Pittsburgh	42.00	42.00	43.00	45.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.85	1.85	1.90	1.90
Steel bars, Chicago	2.00	2.00	2.00	2.10
Steel bars, Philadelphia	2.17	2.17	2.22	2.22
Iron bars, Philadelphia	2.22	2.17	2.22	2.22
Iron bars, Chicago	2.00	2.00	2.00	2.00
Shapes, Pittsburgh	1.80	1.85	1.90	1.90
Shapes, Philadelphia	2.07	2.12	2.12	2.22
Shapes, Chicago	2.00	2.00	2.00	2.10
Tank plates, Pittsburgh	1.80	1.85	1.90	1.90
Tank plates, Philadelphia	2.12	2.17	2.22	2.22
Tank plates, Chicago	2.00	2.00	2.00	2.10
Sheets, black, No. 24, Pittsburgh	3.00	2.90	2.90	3.10†
Sheets, blue anl., No. 10, Pittsburgh	2.25	2.25	2.20	2.35
Sheets, gal., No. 24, Pittsburgh	3.85	3.80	3.70	4.30†
Sheets, black, No. 24, Chicago	3.15	3.10	3.00	3.35†
Sheets, blue anl., No. 10, Chicago	2.40	2.40	2.35	2.55
Sheets, galvanized, No. 24, Chicago	4.00	3.95	3.90	4.55†
Wire nails, Pittsburgh	2.50	2.55	2.55	2.65
Wire nails, Chicago	2.55	2.55	2.60	2.70
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
†Based on No. 28 gage.				
OLD MATERIAL				
Heavy melting steel, Pittsburgh	15.00	15.50	16.40	15.85
Heavy melting steel, eastern Pa.	14.25	14.35	14.75	15.25
Heavy melting steel, Chicago	12.00	12.35	13.05	12.65
No. 1 wrought, eastern Pa.	16.75	16.75	17.65	17.00
No. 1 wrought, Chicago	12.00	12.75	13.50	12.65
Rails for rolling, Chicago	14.50	15.10	15.50	15.10

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (June 15, 1927)	$36.70
Last week (June 8, 1927)	36.72
One month ago (May, 1927)	36.76
Three months ago (March, 1927)	36.83
One year ago (June, 1926)	37.69
Ten years ago (June, 1917)	82.66
Fourteen years ago (June, 1913)	26.78

also surpassed the seasonal average and the corresponding week of 1926.

Unfilled tonnage of the United States Steel Corp. as of May 31 dropped to 3,050,941 tons or 11.7 per cent under April 30. Not since Dec. 31, 1910, has the order book of the corporation been so low but hand-to-mouth buying has injured unfilled tonnage as a barometer.

The continental steel entente has decided that third quarter production, like that of the second, will be based upon an annual rate of 29,287,000 tons. Germany has won a 50 per cent reduction in its penalties for excess domestic tonnage. Organization of a European wire rod syndicate, which has already fixed prices, has prompted negotiations for an international export syndicate.

The IRON TRADE REVIEW composite of fourteen leading iron and steel products is off two cents this week, to $36.70.

Late News Flashes

Finds German Rails Not Dumped Here

Washington, June 14.—Secretary of the Treasury Mellon today signed an order of the customs service finding that no steel rails from Germany have been dumped on the American market.

Corporation Operations Top Independents

Pittsburgh, June 14.—Steel corporation subsidiaries neutralize the low operating rates of independent steelmakers, some of whom are down to 50 per cent, and give the district an average of 70 per cent.

Valley Sheet Output Increasing

Youngstown, O., June 14.—Mill operations here are holding steady with independent steelmakers at 70 per cent and Steel corporation subsidiaries at about 80 per cent. Sheet mill activities are increasing with 114 of the 127 independent units active against 111 last week.

Chicago Steel Rate Drops to 80

Chicago, June 14.—Steelmaking has dropped to about 80 per cent with the blowing out of one of the stacks of the leading interest at South Chicago June 10. This interest now has 20 of its 27 steelworks blast furnace stacks active, and for the district 28 out of 36 are in blast. Structural and plate capacity is engaged 70 to 75 per cent, track fastening 75 and rail 80 per cent.

Tariff Report on Fluorspar Due Shortly

Washington, June 14.—The tariff commission may soon make public its preliminary statement on fluorspar tariff, an effort being made to clear its docket as much as possible prior to the summer recess. What disposition will be made of the magnesite report has not been decided. It is explained this report will cover only importations of crude and caustic magnesite from British India and Greece principally.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$33.00
Pittsburgh, bessemer	33.00
Youngstown	33.00
Cleveland	33.00
Philadelphia	38.30 to 39.30
Chicago	35.00
Forging, Pittsburgh	40.00
Forging, Philadelphia	43.30 to 44.30

SHEET BARS

Pittsburgh	$33.50 to 34.00
Youngstown	33.50 to 34.00
Cleveland	33.50 to 34.00

SLABS

Pittsburgh	$33.00
Youngstown	33.00
Cleveland	33.00

WIRE RODS

Pittsburgh	$42.00
Cleveland	43.00
Chicago	42.50 to 43.00

Standard extras, $5 for screw stock: $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

All grades, Pittsburgh	1.80c to 1.90c

Standard Structural Shapes

Pittsburgh	1.80c to 1.85c
Philadelphia	1.97c to 2.12c
New York	1.99c to 2.14c
Chicago	2.00c
Cleveland	1.99c to 2.04c
Birmingham	1.95c to 2.05c
Pacific coast, c.i.f.,	2.35c

Steel Plates

Pittsburgh	1.80c to 1.85c
Philadelphia	2.12c to 2.22c
New York	2.14c to 2.24c
Chicago	2.00c
Cleveland	1.99c to 2.04c
Birmingham	1.95c to 2.05c
Pacific coast, c.i.f.,	2.30c

Iron and Steel Bars

Pittsburgh, soft steel	1.85c
Pittsburgh, cold finishing	2.05c
Pittsburgh, forging quality	2.05c
Philadelphia, soft steel	2.12c to 2.22c
New York, soft steel	2.14c to 2.24c
Chicago, soft steel	2.00c
Cleveland, soft steel, mill	1.85c to 1.90c
Cleveland, soft steel, del.	1.90c to 2.04c
Birmingham, soft steel	2.00c to 2.05c
San Francisco, soft steel	2.35c to 2.40c
Pittsburgh, refined iron	2.75c to 4.25c
Pittsburgh, reinforcing billet	1.90c
Chicago, reinforcing billet	2.15c to 2.55c
Chicago, reinforc. rail steel	2.00c to 2.50c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	1.90c
Mill, rail steel	1.75c to 1.80c
Philadelphia, common iron	2.12c to 2.22c
New York, common iron	2.14c to 2.24c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pitts., 6 in. and under	2.30c
Bands, Pitts., 6 in. and under	2.30c
Bands, Pittsburgh, over 6 in.	2.10c
Hot rolled strip, Pitts, stamping quality, over 6 in.	2.10c
Hot rolled strip steel, Chicago	2.20c to 2.60c
Bands, Chicago, under 6 inches	2.40c to 2.60c
Bands, Chicago, 6 in. and over	2.20c to 2.50c
Cold rolled strip steel, hard coils, 1⅛ inches and wider by 0.100-inch and heavier, base, Pittsburgh, Cleveland	3.25c
Worcester, Mass.	3.40c
Chicago	3.25c to 3.40c
Stripsheets, 12 in. and wider, Pitts.	3.00c

Cold Finished Steel

Cold finished steel bars, drawn or rolled, Pitts., Chi., c.l.	2.30c to 2.40c
Steel shafting, Pittsburgh, Chi.	2.40c
Cold finished steel bars, Cleve.	2.45c

Alloy Steel

Hot Rolled

F.o.b. Pittsburgh or Chicago

S.A.E. Series Numbers	100 lbs. Bars
2100 (*½ per cent NI. 0.10 to 0.20 per cent C.	$3.00 to 3.10
2500 (5 per cent nickel)	5.30 to 5.50
3100 (Nickel chromium)	3.30 to 3.40
3200 (Nickel chromium)	4.75 to 5.15
4100 (Chromium molybdenum)	3.30 to 3.40
4100 (Ch. mol. 0.25-0.40)	4.00 to 4.15
4615 (Ni. molyb. 1½. 0.10-0.20 molyb.)	4.25 to 4.50
5100 (Chrom. steel)	3.30 to 3.40
6100 (Ch. Van. Forg.)	4.10 to 4.20
6100 (Ch. Van spring)	3.60 to 3.80
9200 (Silico Mang., spring steel)	3.20 to 3.20
9250 (Silico Mang., spring steel)	3.10
N. C. V., (1½% Ni. 1% Chr., Van. 15)	4.25 to 4.35

*Mill number not formally accepted by S. A. E.

Hot rolled alloy billets 4 x 4-inch and over take the same prices per gross tons as same specification of alloy bars per net ton. Sizes from 4 x 4-inch down to 2½ x 2½-inch take same basis plus $5 a ton extra. Billets smaller than 2½ x 2½-inch take bar price on net ton basis.

Cold Rolled

Cold rolled alloy steels take 1c a pound extra over hot rolled when mean carbon is 0.30 or under. When the carbon is above 0.30 the extra for cold rolled is 1.75c, including annealing.

Sheets

SHEET MILL BLACK

No. 24, Pittsburgh base	3.00c
No. 24, Philadelphia, delivered	3.32c
No. 24, Gary, Indiana Harbor	3.10c
No. 24, Chicago, delivered	3.15c
No. 24, Birmingham, base	3.10c to 3.15c

TIN MILL, BLACK

No. 28, Pittsburgh	3.10c
No. 28, Gary base	3.20c

GALVANIZED

No. 24, Pittsburgh base	3.85c
No. 24, Philadelphia, delivered	4.17c
No. 24, Gary, Indiana Harbor	3.95c
No. 24, Chicago, delivered	4.00c
No. 24, Birmingham, base	3.95c to 4.05c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.25c
No. 10, Philadelphia, delivered	2.57c
No. 10, Gary, Indiana Harbor	2.35c
No. 10, Chicago, delivered	2.40c
No. 10, Birmingham, base	2.35c to 2.45c

AUTOMOBILE

No. 20, Pittsburgh, base	4.25c

IRON

No. 10, Pitts., blue ann., c.l.	2.90c
No. 24, Pitts., Box annealed, one pass cold, carload	3.85c
No. 24, Pitts., gal., c.l.	4.85c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base $5.25 to 5.50

Gary, Ind., base 10 cents higher.

Long ternes, primes, No. 24 4.20c

*Price subject to quantity differentials.

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra

F.O.B. Cleveland and Pittsburgh base

Bright plain wire, No. 9 gage	2.40c
Annealed fence wire	2.55c
Galvanized wire, No. 9 gage	3.00c
Barbed wire, painted	2.95c
Barbed wire, galvanized	3.20c

Per. 100 lbs.

Wire nails	$2.50
Galv'd nails, shorter than 1-in.	4.75
Gal'd nails, 1-in. and longer	4.50
Polished staples	2.95
Galvanized staples	3.20

Coated nails, 100 lb. kegs, subject to Sept. 1, 1926, extra card over wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relay, rails, Pitts., 60 to 70 lb.	25.00 to 27.00
Light rails, 25 to 45, mills	36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts.	2.80c
Spikes, boat and barge, Pitts.	3.10c
Spikes, railroad, Chicago	2.90c
Track bolts, Pitts. stand	70 off list
Track bolts, Chicago	3.90c
Tie plates, Chicago, Pitts.	2.35c

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less. Chicago del. 2½ points less.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	38⅓
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled 3¼ to 3½-inch	46 off

Further discounts of seven 5 per cents for carloads or six 5 per cents for less-carload, on lap welded steel. On seamless hot rolled several more 5 per cents, and on charcoal two 10 per cents to two 10 and one 5 per cents.

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Birmingham	$38.00 to 39.00
Six-inch and over, Birming'm	34.00 to 35.00
Four-inch, Chicago	47.20 to 49.20
Six-inch to 24-inch, Chicago	43.20 to 44.70
Over 24-inch, Chicago	45.20
Four-inch, New York	51.50
Six-inch and over, New York	47.50
Standard fittings, Bir. base	$110.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $4 higher than Class B

Bolts and Nuts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.

CARRIAGE BOLTS

All sizes, cut thread	70 off

Rolled thread ⅝x6 and smaller take 10 per cent lower list.

Eagle list	65-10 off

MACHINE BOLTS

All sizes, cut thread	70 off

Rolled thread ⅝x6 and smaller take 10 per cent lower list.

Lag screws	70 off
Plow bolts, Nos. 1-2-3-7 heads	70 off
Tap bolts	70 off
Blank bolts	70 off
Stud bolts without nuts	70 off

Stove bolts, 80-10-5 off in packages; 80-10-5 with 2½ off in bulk.

Tire bolts	60-5 off

NUTS

Semifinished	70 off

HEXAGON CAP SCREWS

Milled	80-10-10 off
Upset 1-in. diam and smaller	85-5 off

SQUARE HEAD SET SCREWS

Milled	80-10 off
Upset, 1-in. diam. and smaller	80-10-10 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.75c
Structural rivets, c. l., Chi.	2.85c

**Rivets, 7/16-inch and smaller, Pittsburgh, Cleveland and Chicago, 70, 10 and 5 to 70 and 10 off.

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.75 to 6.90 off
Wrought c.l., Pitts. dist.	6.75 to 6.50 off
Lock washers	85 off

Pig Iron

Market Quiet, and Easier in Some Districts —Second Quarter Commitments Carried Into Third Quarter

ONLY a moderate amount of pig iron is being purchased for third quarter. Makers generally do not have much of their output for that period covered. In some districts buying shows a slight improvement over the week preceding, but with comparatively small totals. More inquiries are developing at Chicago; one for 2000 tons of malleable affords sellers some encouragement. The valley market is reported as devoid of practically all activity. Furnace interests at Cleveland increased the aggregate of their sales during the past week to 27,000 tons, but fully a third of this was taken in Cleveland, and at a sacrifice of 50 cents in prices. Valley malleable also is down 50 cents, though the majority of makers hold to $18.50 for No. 2 foundry.

PITTSBURGH, June 14.—Due largely to the fact that pig iron users have not taken out their iron as expected they have enough coming to them to last a month or two in the third quarter. Hence inquiries for that period are practically absent. Pig iron shipments, however, have improved slightly. A few spot market inquiries are pending for single carloads to 200 tons. Malleable is selling at $18 to $18.50, valley, while the minimum on No. 2 foundry is $18.50. No inquiries or sales involving steel making iron are noted. Basic is quotable at $18, and bessemer at $19, valley.

Boston, June 14.—Market is bare of fresh inquiries but more interest is shown in third quarter pig iron purchases. Local furnace reports sales between 5000 and 6000 tons last week. Prices remain unchanged, with Everett, Mass., furnace quoting $20 as an average.

New York, June 14.—Pig iron buying has improved, though indications are that purchases in the past week in this territory did not involve a total over 6000 tons. Included is some malleable placed by Eastern Malleable Iron Co. Inquiry is small. Prices are unchanged for eastern Pennsylvania foundries at $21, base, furnaces. Buffalo foundry ranges from $17.50 to $18, base, Buffalo.

Buffalo, June 14.—Inquiry for pig iron does not exceed 2500 tons in this district. The past week's bookings were similarly small. It is believed by some furnace operators recent sales of lots of 1000 tons and larger were on a base of $17.50 to $17.75, although $18 continues the nominal minimum.

Cleveland, June 14.—Pig iron makers face the fact that spontaneous orders on a large scale for third quarter are not in evidence. The market does not have much snap; a buying movement is not expected for a month or more, mainly because of seasonal dullness in melting operations, and many consumers are carrying over stocks or commitments. Sales booked by furnace interests with headquarters here totaled 29,000 tons in the past week, an increase of about 7000 tons over the week preceding. A drive for business in Cleveland netted over 10,000 tons, largely at the expense of prices, as the Cleveland price is off 50 cents, to $18.50, base, furnace, equivalent to $19 in the local switching area. size, the largest reported in Cleveland being 2000 tons. The easier Sales generally were of moderate position of the Cleveland market is reflected in nearby competitive territory, though furnace interests are endeavoring to hold to $18 to $18.25, base.

Pig Iron Prices

Per gross ton

Bessemer, valley furnace	$19.00
Bessemer, del. Pittsburgh	20.76
Basic, valley furnace	18.00
Basic, del., Pittsburgh	19.76
Basic, Buffalo furnace	17.25 to 17.75
Basic, del., eastern Pa.	20.75 to 21.00
Malleable, valley furnace	18.00 to 18.50
Malleable, del., Pittsburgh	19.76 to 20.26
Malleable, del., Cleveland	19.00
Malleable, Chicago furnace	20.00
Malleable, Buffalo furnace	17.75 to 18.00
Malleable, del., eastern Pa.	22.25 to 22.75
No. IX Eastern del., Phila.	22.76 to 23.91
No. IX, Buffalo furnace	18.50 to 19.00
No. 1 foundry, Chicago furnace	20.50
No. 2 foundry, valley furnace	18.50
No. 2 foundry, del. Pittsburgh	20.26
No. 2 fdy., Everett, Mass., fur.	19.50 to 20.50
No. 2 foundry, Buffalo furnace	17.75 to 18.00
No. 2 foundry, Chicago furnace	20.00
No. 2 foundry, Granite City	20.50 to 21.00
No. 2 foundry, Ironton furnace	20.00
No. 2 foundry, del., Cleveland	19.00
No. 2 foundry, del., Phila.	21.76 to 22.91
No. 2 foundry, N. J., tidewater	21.03 to 22.76
No. 2X east, N. J., tidewater	21.53 to 23.26
No. 2X, eastern del., Phila.	22.26 to 23.41
No. 2X, foundry, Buffalo fur.	18.00 to 18.50
No. 2X, eastern del., Boston	23.15 to 24.15
No. 2X, Buffalo, del., Boston	21.91 to 22.91
No. 2 Alabama, Birmingham	18.00
No. 2 Alabama, del. Cincinnati	21.69
No. 2 Tenn., Birmingham base	18.50
No. 2 Tenn. ,del. Cincinnati	22.10
No. 2 Alabama, del. Philadelphia	24.01
No. 2 Alabama, del. Chicago	24.01
No. 2 Ala., del Chicago river-rail	22.18
No. 2 Ala., del., Boston, rail-water	24.91 to 25.91
No. 2 Alabama, del. Cleveland	24.01
No. 2 Alabama, del. St. Louis	23.42
No. 2X, Virginia furnace	22.00
No. 2X, Virginia, del. Phila.	27.17
No. 2X, Virginia, del., Jers. City	27.54
No. 2X, Virginia, del. Boston	27.92
Gray forge, delivered eastern Pa.	20.75 to 21.00
Gray forge, val., del. Pittsburgh	19.76
Low phos., standard, valley	28.00
Low phos., standard, Phila	25.76 to 29.79
Low phos., copper bearing fur.	24.00
Charcoal, Birmingham	29.00
Charcoal, Superior, del. Chicago	27.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $25.50; 6 per cent $26.50; 7 per cent $27.50; 8 per cent $28.50; 9 per cent $30.00; 10 per cent $32.00; 11 per cent $34.00; 12 per cent $36.00; 13 per cent $38.00; and 14 per cent $40.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $34.00; 11 per cent $36.00; 12 per cent $38.00; 13 per cent $40.00; and 14 per cent $42.00; 15 per cent $44.50; 16 per cent $47.00; 17 per cent $49.50.

Chicago, June 14.—More third quarter inquiries are developing. Several important ones are out, including 2000 tons of malleable for a district melter, and 400 tons of foundry iron.

Stocks generally are light. In a number of instances tonnages being shipped on second quarter contracts will carry melters well along into third quarter activity. About 300 tons of foundry iron has been sold in eastern Michigan, and a number of carload lots for prompt shipment are moving.

Several hundred tons of silvery iron has been closed for Michigan melters and 200 to 300 tons of charcoal iron has been sold in this district. Silvery iron is firm at the Jackson county, O., schedules, while charcoal iron is steady at $24, base. Furnaces are obtaining $20, Chicago furnace, for No. 2 foundry and malleable, except in outside competitive districts.

Cincinnati, June 14.—Pig iron dealers are more hopeful because of numerous small inquiries and orders. Monday opened up with a Louisville inquiry for 350 tons of foundry iron third quarter. The Louisville & Nashville railroad asked for bids on 700 tons of foundry iron, bids closing Friday June 17. Canton Malleable Iron Co. is inquiring for 500 tons of malleable for third quarter. Three inquiries involve a total of 2000 tons for Indiana points, and 600 tons for a river point. A Cleveland firm wants 300 to 500 tons of southern iron. The sale of one car of 6 per cent silvery iron to an Erie, Pa., consumer, and a car of 7 per cent silvery to a Port Huron, Mich., customer are noted. A central Indiana melter wants 1200 tons of northern iron for third and fourth quarter.

St. Louis, June 14.—Pig iron demand has fallen off, a discouraging feature from the producer's viewpoint being the lack of interest in third quarter. Contracting for that period is the smallest for this particular time in several years. Sales reported during the past week total approximately 1800 tons, of which amount the St. Louis Coke & Iron Corp. booked 1500 tons. A nearby Illinois malleable interest took 600 tons for June and July delivery. The price is unchanged, at $20.50 to $21, f. o. b. Granite City.

(*Concluded on Page* 1563)

Coke

Prices Stronger, with Less Output—Furnaces Inquiring for Third Quarter Supplies

FURNACE interests are inquiring for third quarter coke supplies, and due to recent curtailment in oven operations makers are in better position to command $3.25 and $3.50. Spot coke quotations also are stronger, the minimum being near $3. The higher prices are leading some consumers to delay purchasing. Demand for foundry coke is more active, especially in the East.

Pittsburgh, June 14.—Negotiations for furnace coke for third quarter have been halted temporarily by hesitancy of consumers to pay $3.25 to $3.50. The Sharpsville furnace wants 13,000 tons monthly, and others are asking for similar tonnages. The Dover, O. stack wants 10,000 tons for shipment from now to July 20. It is understood to have lined up 7000 tons at $3.25. Due to curtailment of production the market is more in the producers' favor. The spot market minimum is rapidly approaching $3. Nothing less is quoted on new coke. Occasional single carloads on track are offered at $2.90. More inquiries are out for foundry coke in the Philadelphia and other eastern districts. Users in this and other nearby sections are well protected on contracts for the next quarter or last half, at $4.50 to $4.75. The spot market now is quotable at $4 minimum, anything below that applying to fuel below standard.

Production of coke in the Connellsville region in the week ended June 4 was 104,690 tons, compared with 106,680 tons in the preceding week, according to the *Connellsville Courier*.

New York, June 14.—Current consumption of coke in this territory is at a heavier rate. In the important Newark, N. J., district, foundries are estimated to be operating at 67 per cent, compared with 55 per cent some weeks ago. Foundries generally are obtaining their coke on contracts and there is little spot buying. Spot beehive foundry coke continues $4.25 Connellsville, and higher depending on brand. On beehive furnace coke the market is firmer and $3.25, Connellsville, appears the minimum. By-product foundry coke continues $9.59 to $10.77 delivered, at Newark and other New Jersey consuming points, depending on freight.

Cincinnati, June 14.—The Louisville & Nashville railroad is in the market for 600 tons of beehive foundry coke for third quarter. The inquiry for 8000 tons noted last week for shipment from August, 1927, to August, 1928, to a Cincinnati nonmetallurgical concern is not yet closed, but it is believed will shortly be placed. Specifications for foundry coke are fair.

St. Louis, June 14.—While shipments of metallurgical coke from by-product ovens hold up well, new buying has tapered off, reflecting a general slowing down in the melt of iron. The movement of coke to industrial consumers is satisfactory. Prices are steady.

Birmingham, Ala., June 14.—Demand for foundry coke still is fairly good. Prices are firm at $5.50. A little beehive coke still is being produced and $6 is asked for it.

Coke Prices

Beehive Ovens

Prices per net ton

Connellsville furnace	$2.90 to 3.50
Connellsville foundry	4.00 to 4.75
New River foundry	7.00 to 8.00
New River furnace	6.00
Wise county furnace	4.25 to 5.00
Wise county foundry	4.00 to 5.00
Alabama foundry	6.00

By-Product

Foundry, Newark, N. J.; del.	9.59 to 10.77
Foundry, Chicago, ovens	9.75
Foundry, New England, del.	12.00
Foundry, St. Louis	9.75 to 10.00
Foundry, Birmingham	5.50
Foundry, Indianapolis, del.	10.25
Foundry, Ashland, Ky.	7.50
Foundry, Portsmouth, O.	7.50

Ferroalloys

Consumers Covered for Last Half—Specifications Small

Pittsburgh, June 14.—Ferroalloy specifications are no larger than required to sustain the lowered operating rates among consumers. New business in ferromanganese is practically at a standstill, with only an occasional less-than-carload lot being bought, and less frequently a single carload. Business for last half is now on the books but specifications for July shipment so far have been small. Because American producers promptly met the price situation of $90, Atlantic seaboard base, little imported ferromanganese has been sold. One seller reports he has not sold a pound, his customers preferring domestic material and service. Spiegeleisen contracts have been written at $35 to $37, depending on the tonnage involved. Practically nothing is being done in the spot market.

New York, June 14.—Tungsten ore is lower, $10.50 for wolframite and about $11 for scheelite, a short ton unit. Special ferroalloys are unchanged.

Chicago, June 14.—Spiegeleisen is quiet and the market is easy at $35, base, for the 19 and 21 per cent grade. Most of the ferromanganese contract renewals at the $90 price have been closed.

Unfilled Steel Orders Lowest Since 1910

Unfilled bookings of the United States Steel Corp. as of May 31 were 3,050,941 tons, a drop of 405,191 tons or 11.7 per cent. This is the heaviest drop in tonnage and percentage since April 30, 1926, when bookings fell off 511,959 tons or 13.9 per cent, and brings the total to the lowest point since Dec. 31, 1910. At that time unfilled bookings were 2,674,757 tons. This latter comparison lacks much in its significance in view of the change in methods of buying. Following are further comparisons:

Date	Total	Change, tonnage	Change, per cent	
May 31, 1927	3,050,941	405,191—	11.7	—
Apr. 30, 1927	3,456,132	97,008—	2.72	—
Mar. 31, 1927	3,553,140	43,979—	1.22	—
Feb. 28, 1927	3,597,119	203,058—	5.34	—
Jan. 31, 1927	3,800,177	160,792—	4.5	—
Dec. 31, 1926	3,960,969	153,522+	4.1	+
Nov. 30, 1926	3,807,447	123,786+	3.36	+
Oct. 31, 1926	3,683,661	90,152+	2.50	+
Sept. 30, 1926	3,593,509	51,174+	1.42	+
Aug. 31, 1926	3,542,335	60,187—	1.67	—
July 31, 1926	3,602,652	124,010+	3.56	+
June 30, 1926	3,478,642	170,608—	4.41	—
May 31, 1926	3,649,250	218,726—	5.91	—
Apr. 30, 1926	3,867,976	511,959—13.9		—
Mar. 31, 1926	4,379,935	236,887—	5.13	—
Feb. 28, 1926	4,616,822	265,917—	5.7	—
Jan. 31, 1926	4,882,739	150,625—	3.0	—
Dec. 31, 1925	5,033,364	451,584+	9.8	+
Nov. 30, 1925	4,581,780	472,597+	11.5	+
Oct. 31, 1925	4,109,183	391,886+	9.5	+
Sept. 30, 1925	3,717,297	204,494+	5.8	+
Aug. 31, 1925	3,512,803	26 664—	0.756	—
July 31, 1925	3,539,467	170,991—	4.6	—
June 30, 1925	3,710,458	339,342—	8.3	—
May 31, 1925	4,049,800	396,768—	8.4	—
Apr. 30, 1925	4,446,568	416,996—	6.6	—

Coke Output Rises

Beehive coke production in the week ended June 4 totaled 149,000 net tons, compared with 125,000 tons in the week preceding, states the bureau of mines. For the calendar year to date beehive coke output has been 3,940,000 tons; a year ago it was 5,923,000 tons.

Bituminous coal output in the week ended June 4 was 7,372,000 tons, against 8,476,000 tons in the week preceding. For the calendar year to date the total of bituminous coal stands at 245,333,000 tons, compared with 231,584,000 tons a year ago.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent, tidewater, duty paid	$90.00
Ferromanganese, del., Pittsburgh	94.79
Spiegeleisen, 19 to 21 per cent domestic furnace	35.00 to 37.00
Ferrosilicon, 50 per cent freight allowed	85.00 to 87.50
Ferrochrome, 60-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.50
Ferrotungsten stand. lb. cont.	0.98 to 1.00
Ferrovanadium, 30-40 per cent, per lb. estimated on analysis	3.15 to 3.65
Ferro-carbon-titanium carload, producers plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18%)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala., (24 per cent)	122.50

The Market Section

Plates

Market Continues Easy—Orders Small—Some Improvement in East

EASIER price conditions are reflected in the plate market, the sales average in some districts being nearer 1.80c than 1.85c, Pittsburgh. Chicago makers have had to offer concessions for southwestern business, though demand from that quarter still is slack. New inquiries have been issued for approximately 6000 tons of oil tank plates. General orders are small.

PLATE PRICES, PAGE 1548

New York, June 14.—Plate demand here is fully up to the average of recent weeks and two mills report improved bookings. The average price is somewhat lower. The 1.80c, base, Pittsburgh, price has become more general in connection with attractive tonnages. The full market range continues 1.80c to 1.90c. Bethlehem Steel Co. has booked about 700 tons of plates from New York Engineering Co. for a pipe line.

Pittsburgh, June 14.—Individual plate orders still are small. Attractive lots command 1.85c, and 1.80c has been given more prominence due to the tendency to meet competitive figures away from the Pittsburgh district. Within the past few days formal orders have been received by American Bridge Co. and Midland Barge Co., for five additional barges each, from Inland Waterways Corp.

Cleveland, June 14.—Demand for plates has dropped markedly. A Detroit interest has closed on 800 tons of floor plates. The general market is 1.85c, Pittsburgh, but less is done on attractive orders. Interest in the third quarter is mild.

Detroit, June 14.—Plates are quoted at 1.80c to 1.85c, Pittsburgh, depending upon the size of the business. June shipments to the automotive industry will fall somewhat short of May. Water shipments from Buffalo are increasing.

Chicago, June 14.—Orders for oil tankage plates have slumped. About 4500 tons in fresh inquiry has developed from the Midcontinent field, and about 1500 tons from the oil regions of San Angelo, Texas. Additional tonnage is pending. Chicago mills are forced to go as low as 1.90c for plate business in the Southwest. For the Chicago district trade, 2.00c applies.

Philadelphia, June 14.—The Steel were more active in the past week, but continue restricted to small spot lots. Prices generally range from 1.80c to 1.85c, Pittsburgh, on attractive business, with 1.90c for small orders. Some third quarter contracts have been placed but most consumers prefer to buy for current needs. Sales of heavy gages of strip sheets are noted, which business ordinarily would go to plate mills.

CONTRACTS PLACED

1600 tons, riveted pipe line, Detroit water main, to Biggs Boiler Works Co., Akron, O.

825 tons, five barges, Inland Waterways Corp., upper Mississippi river, to American Bridge Co.

825 tons, five barges, Inland Waterways Corp., upper Mississippi river, to Midland Barge Co.

537 tons, 30-inch pipe line, Spokane, to Steel Tank & Pipe Co.

191 tons, 18-inch pipe line, Spokane, to Beall Tank & Pipe Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

500 tons, pipe line, Grass Valley, Calif.; Steel Tank & Pipe Co. low bidder.

Form Company To Take Over Thomas Stack

Milwaukee Blast Furnace Co., Milwaukee, has been incorporated to engage in the manufacture of pig iron and its by-products. It is incorporated by a syndicate of bondholders of the defunct Thomas Furnace Co., Milwaukee, for whom the Thomas property recently was bid in for $300,000 by S. G. Garraway, of the S. G. Garraway Co., Chicago, who is expected to be elected president of the new corporation. David W. Bloodgood, attorney, 85 East Michigan street, Milwaukee, is secretary of the bondholders' committee and with several associate attorneys appears as incorporator.

Officers of the New Haven, Conn., chapter of the American Society for Steel Treating has been elected as follows: Chairman, W. Paul Eddy Jr., metallurgist, Geometric Tool Co., New Haven; vice chairman, Harold Fish, secretary-treasurer, Ready Tool Co., Bridgeport, Conn.; secretary, F. E. Stockwell, lubricating engineer, Standard Oil Co., of New York, New Haven; treasurer, Walter G. Aurand, metallurgist, R. Wallace & Sons Mfg. Co., Wallingford, Conn.

Semifinished

Market Moving Forward on Hand-to-Mouth Basis—Mills Ready to Reaffirm Prices

DEMAND for sheet bars, billets and slabs in the third quarter will continue of a hand-to-mouth character judging from reports of slow action on the part of buyers. Some makers have not booked tonnage for third quarter. Valley mills indicate their prices will be reaffirmed. Specifications are fair, manufacturers of strip steel taking more billets.

SEMIFINISHED STEEL PRICES, PAGE 1548

Pittsburgh, June 14.—Impetus given to the manufacture of strip steel by greater releases from automotive customers is reflected in a more active specifying rate for billets. Slabs have moved more freely but sheet bars continue in the background, although a few small shipments against old contracts at $33.50 and $34 are made. New business in billets and slabs is slack. Makers claim $33 is the minimum they are willing to offer. Small lots of forging billets are specified against $40 contracts. Occasionally new orders are placed. Wire rod users, including some of the nut manufacturers, have been ordering more freely. Wire rod producers claim they have not taken any business under $42. Skelp is untested by open market inquiry, and specifications against contracts recently have been held back. Skelp is 1.80c to 1.90c, depending upon quantity.

Youngstown, O., June 14.—While sales of semifinished materials are infrequent prices appear steady at $34 for sheet bars and $33 for billets and slabs. Buyers intimate they will continue to purchase for the early portion of third quarter in lots as needed, and the mills also intimate that they expect to reaffirm present prices.

Philadelphia, June 14.—Current billet sales are small or of moderate size for quick shipment. Rerolling billets are $33 to $34, Pittsburgh, although $34 has been done on most sales. Forging billets are $38 to $39. Wire rods now are generally $41 to $42.

Bar Mill Wage Parley To Resume in July

Pittsburgh, June 14.—The adjourned bar iron wage conference between the Western Bar Iron association and the Amalgamated Association of Iron, Steel and Tin Workers probably will not be held until subsequent to July 4, according to Amalgamated association officials here. Mills, however, will continue to operate until July 31 under the wage agreement, although the 1926-7 scale will expire by limitation at midnight June 30. It is said differences existing between the conferees are not great.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumers

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	12.00 to 13.00
Boston (dealers)	9.00 to 9.50
Buffalo, No. 1	14.75 to 15.25
Buffalo, No. 2	13.75 to 14.25
Chicago	12.00 to 12.50
Cincinnati (dealers)	11.50 to 12.00
Cleveland, No. 1	13.50 to 14.00
Cleveland, No. 2	13.00 to 13.50
Detroit, No. 1	11.50 to 12.00
Eastern Pennsylvania	14.00 to 14.50
Bethlehem delivery	14.00 to 14.50
New York (dealers) (railroad)	10.50 to 11.35
New York (dealers) (yard)	7.50
Pittsburgh, No. 1	14.75 to 15.00
St. Louis	10.75 to 11.25
Valleys, No. 1	15.50

COMPRESSED SHEETS

Buffalo	14.00 to 14.50
Chicago	10.25 to 10.75
Cleveland	13.00 to 13.25
Detroit	10.25 to 10.75
Pittsburgh	14.00
Valleys	14.00 to 14.50

BUNDLED SHEETS

Buffalo	10.75 to 11.25
Cincinnati (dealers)	9.50 to 10.00
Cleveland	11.00 to 12.00
Eastern Pennsylvania	9.50 to 10.00
Pittsburgh	13.00
St. Louis	8.50 to 9.00

SHEET CLIPPINGS, LOOSE

Chicago	8.25 to 8.75
Cincinnati	8.75 to 9.25
Detroit	7.50 to 8.00
St. Louis	8.00 to 8.50

STEEL RAILS, SHORT

Birmingham	12.50 to 13.00
Buffalo	14.00 to 15.00
Chicago	15.50 to 16.00
Cincinnati (dealers)	17.00 to 17.50
Detroit	11.50 to 12.00
St. Louis	15.00 to 15.50

STOVE PLATE

Birmingham	13.00 to 14.00
Boston (consumers)	11.50 to 12.00
Buffalo	14.00 to 14.50
Chicago (net)	12.25 to 12.75
Cincinnati (dealers) (net)	9.00 to 9.50
Cleveland	12.00 to 12.50
Detroit (net tons)	11.50 to 12.00
Eastern Pennsylvania	11.50 to 12.00
New York (dealers) (mill)	8.00
Pittsburgh	12.00 to 12.50
St. Louis	14.00 to 14.50

LOW PHOSPHORUS

Buffalo, billet and bloom crops	16.25 to 16.75
Cincinnati (dealers)	14.00 to 14.50
Eastern Pennsylvania	12.00
Pitts. billet and bloom crops	19.00 to 19.50
Cleveland, billet and bloom crops	17.00 to 17.50

SHOVELING STEEL

Chicago	12.00 to 12.50
Pittsburgh	10.50 to 11.00
St. Louis	10.75 to 11.25

KNUCKLES, COUPLERS, SPRINGS

Chicago	14.00 to 14.50
Eastern Pennsylvania	16.00 to 16.50
Pittsburgh	16.00 to 16.50
St. Louis	12.00 to 12.50

FROGS, SWITCHES, GUARDS

Chicago	13.00 to 13.50
St. Louis	12.50 to 13.00

ANGLE BARS—STEEL

Buffalo	15.25 to 15.75
Chicago	13.00 to 13.50
St. Louis	11.75 to 12.25

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	11.00 to 11.50
Boston (dealers)	11.50 to 12.00
Buffalo, No. 1	13.50 to 14.00
Buffalo, No. 2	14.50 to 15.00
Chicago, No. 1	12.00 to 12.60
Chicago, No. 2	12.00 to 12.50
Cincinnati, No. 1 (dealers)	11.50 to 12.00
Cleveland, No. 1	11.50 to 12.00
Eastern Pennsylvania	16.50 to 17.00
New York, No. 1 (dealers)	14.00 to 14.50
Pittsburgh, No. 1	12.00 to 12.50
Pittsburgh, No. 2	15.00
St. Louis, No. 1	11.00 to 11.50
St. Louis, No. 2	10.75 to 11.25

WROUGHT PIPE

Boston (dealers)	8.00 to 8.50
Eastern Pennsylvania	12.50 to 13.00
Buffalo	13.00 to 13.50
New York (dealers)	8.75 to 9.25

YARD WROUGHT

Boston	10.50 to 11.00
Eastern Pennsylvania	16.00 to 16.50

BUSHELING

Buffalo	14.00 to 14.50
Chicago, No. 1	10.50 to 11.00
Chicago, No. 2	9.00 to 9.50
Cincinnati, No. 1 (dealers)	10.00 to 10.50
Cincinnati, No. 2	8.00 to 8.25
Pittsburgh, No. 1	12.50 to 13.00
St. Louis, No. 1	9.75 to 10.25

MACHINE SHOP TURNINGS

Birmingham	8.50 to 9.00
Boston	5.00 to 5.50
Buffalo	9.50 to 10.00
Chicago	7.00 to 7.50
Cincinnati (dealers)	7.50 to 8.00
Cleveland	8.75 to 9.00
Detroit	7.25 to 7.75
Eastern Pennsylvania	10.00 to 10.50
New York (dealers)	6.00 to 7.85
Pittsburgh	10.50 to 11.00
St. Louis	6.75 to 7.25

CAST IRON BORINGS

Birmingham (chemical)	13.00 to 13.50
Birmingham (plain)	8.50 to 9.00
Boston, chemical	10.50 to 11.00
Boston (dealers)	6.50 to 7.00
Buffalo	11.00 to 11.50
Chicago	9.75 to 10.00
Cincinnati (dealers)	8.50 to 9.00
Cleveland	10.00 to 10.50
Detroit	8.00 to 8.50
Eastern Pennsylvania	11.50
Eastern Pennsylvania (chem.)	15.50 to 16.00
New York (dealers)	7.35 to 7.85
Pittsburgh	10.50 to 11.00
St. Louis	8.75 to 9.25
Valleys	13.50

MIXED BORINGS AND TURNINGS

For blast furnace use

Boston (dealers)	5.50 to 6.00
Buffalo	11.00 to 11.50
Cincinnati (dealers)	8.50 to 9.00
Cleveland	10.00 to 10.50
Detroit	8.00 to 8.50
Eastern Pennsylvania	10.50
New York (dealers)	7.35 to 7.85
Pittsburgh	10.50 to 11.00

PIPES AND FLUES

Chicago (net)	7.50 to 8.00
Cincinnati (dealers)	8.00 to 8.50
St. Louis	8.50 to 9.00

RAILROAD GRATE BARS

Buffalo	12.50 to 13.00
Chicago (net)	11.25 to 11.75
Cleveland	12.00 to 12.50
Eastern Pennsylvania	11.50 to 12.00
New York (dealers)	8.50 to 9.00
St. Louis	11.50 to 12.00

FORGE FLASHINGS

Boston (dealers)	7.00 to 7.50
Buffalo	13.00 to 13.50
Chicago	9.00 to 9.50
Cleveland (over 10 in.)	12.50 to 13.00
Detroit	9.50 to 10.00
Pittsburgh	13.00 to 13.50

FORGE SCRAP

Boston (dealers)	6.00 to 6.50
Chicago	14.25 to 14.75
Eastern Pennsylvania	11.00 to 11.50

ARCH BARS AND TRANSOMS

Chicago (net)	18.50 to 19.00
St. Louis	18.75 to 19.25

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	8.00 to 8.50
Buffalo	13.50 to 14.00
Chicago	10.50 to 11.00
Cleveland	12.00 to 12.50
Eastern Pennsylvania	12.50 to 13.00
Pittsburgh	13.00 to 13.50
St. Louis	9.00 to 9.50

STEEL CAR AXLES

Birmingham	16.00 to 17.00
Boston (shipping point)	16.00 to 16.50
Buffalo	16.50 to 17.00
Chicago	19.60 to 20.15
Cleveland	16.00 to 16.50
Eastern Pennsylvania	20.00
Pittsburgh	19.00 to 19.50
St. Louis	18.75 to 19.25

SHAFTING

Boston (shipping point)	13.50 to 14.00
Chicago	17.35 to 18.00
Eastern Pennsylvania	18.00 to 20.00
New York (dealers)	14.00 to 14.50
St. Louis	17.50 to 18.00

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	12.00 to 13.00
Boston (consumers)	17.00 to 17.50
Buffalo, iron	13.50 to 14.00
Buffalo, steel	16.50 to 17.00
Chicago, iron	13.50 to 14.00
Chicago, steel	14.25 to 14.75
Cincinnati	13.00 to 13.50
Eastern Pennsylvania	16.00 to 16.50
New York iron (dealers)	12.50 to 13.50
Pittsburgh, iron	15.00 to 15.50
Pittsburgh, steel	16.00 to 16.50
St. Louis, iron	13.00 to 13.50
St. Louis, steel	13.25 to 13.75

No. 1 CAST SCRAP

Birmingham, cupola	15.00 to 16.00
Boston	16.50 to 17.00
Buffalo	15.00 to 15.50
Chicago, No. 1 machinery	16.50 to 17.00
Chicago, No. 1 railroad	15.10 to 15.65
Chicago, No. 1 agricultural	14.85 to 15.40
Cincinnati No. 1 machinery cupola (net tons dealers)	15.50 to 16.00
Cleveland, cupola	15.75 to 16.25
Detroit (net tons)	14.00 to 14.50
Eastern Pennsylvania, cupola	16.50 to 17.00
New York, cupola (dealers)	14.00 to 14.50
Pittsburgh, cupola	15.00 to 15.50
San Francisco, delivered	20.00 to 21.00
Seattle	16.00
St. Louis, railroad	15.00 to 15.50
St. Louis, agricultural	15.00 to 15.50
St. Louis, machinery	17.00 to 17.50
Valleys	16.50 to 17.00

HEAVY CAST

Boston	15.00 to 15.50
Buffalo (breakable)	13.75 to 14.25
Cleveland	12.50 to 12.75
Detroit (automobile) (net tons)	17.50 to 18.50
Eastern Pennsylvania	15.50 to 16.00
New York (dealers)	13.00 to 13.50
Pittsburgh	14.00

MALLEABLE

Boston, railroad	15.00 to 15.50
Buffalo	16.50 to 17.00
Chicago, agricultural	13.00 to 13.50
Chicago, railroad	13.50 to 14.00
Cincinnati, railroad (dealers)	14.00 to 14.50
Cincinnati, agricultural (dealers)	13.00 to 13.50
Cleveland, agricultural	15.00 to 15.50
Cleveland, railroad	15.50 to 16.00
Detroit	15.00 to 15.50
Eastern Pennsylvania, railroad	16.50 to 17.00
Pittsburgh, railroad	14.50 to 15.00
St. Louis, agricultural	12.50 to 13.00
St. Louis, railroad	12.00 to 12.50

Miscellaneous Scrap

RAILS FOR ROLLING

5 feet and over

Birmingham	13.00 to 14.00
Boston (dealers)	10.50 to 11.00
Buffalo	15.50 to 16.00
Chicago	14.50 to 15.00
Eastern Pennsylvania	16.50 to 17.00
New York	13.75 to 14.25
Pittsburgh district	16.00 to 17.00
St. Louis	13.50 to 14.00

LOCOMOTIVE TIRES

Chicago, No. 1	15.50 to 16.00
Chicago, cut	14.50 to 15.00
St. Louis, No. 1	14.00 to 14.50

LOW PHOSPHORUS PUNCHINGS

Chicago, cut	14.50 to 15.00
Eastern Pennsylvania	16.50
Pittsburgh	17.00 to 17.50

The Market Section

Scrap

Lack of Activity Continues with Prices Weak and Unsteady in All Markets—New Lows Reached

CONSUMERS of iron and steel scrap continue to remain out of the market except for small lots for immediate needs. Prices are low, in many cases the lowest in six years. Some dealers profess to believe the bottom has been reached. Occasional buying is at prices offered by buyers. Lack of interest is displayed by all users.

Chicago, June 14.—Iron and steel scrap has remained practically stationary. Consumer buying is entirely lacking for any tonnages, although shipping continues on orders placed at prices higher than the present market. Heavy melting steel finds no demand at $12.00 to $12.50, delivered Chicago, per gross ton.

Boston, June 14.—General demand for iron and steel scrap is light and there has been no marked change. Demand for chemical borings is fair and prices show no change. It is reported that one eastern concern is shipping a cargo of yard steel abroad at $8.50, delivered to steamer.

New York, June 14.—Except a further reduction in turnings, for which dealers are now offering $6 to $7.85, New York, the local scrap market is unchanged. This follows a lower price of $9.50, delivered, on shipments for Harrisburg, Pa., and Phoenixville, Pa. The situation generally is dull and listless.

Philadelphia, June 14.—Trading in scrap continues to involve small lots, with most buying by dealers for contracts. Mills have bought turnings in the past week, mostly at $10 but some at $9.50, making this grade lower than wrought pipe, which also is 50 cents lower.

Buffalo, June 14.—Iron and steel scrap shows marked weakness, although some dealers insist consumer stocks are so low buying in tonnage will be forced soon. Heavy melting steel is not worth much more than $15 for No. 1 on the basis of present offers.

Pittsburgh, June 14.—With a sale of heavy melting steel at $14.75, the scrap market has touched the lowest point since 1921. This order came from a nearby mill and was divided among five or six sellers, one taking approximately 5000 tons and the rest 1500 or 2000 tons each. On the other hand, dealers are today paying $15 for good scrap for delivery to at least three points. The market is quoted at $14.75 to $15.

Cleveland, June 14.—Purchase of a tonnage of heavy melting steel by a Cleveland melter is the only feature of the market. The tonnage and price are not known as the purchase was made through outside dealers. The market is waiting developments. Prices are nominal. Deliveries on existing contracts are being regulated by consumers.

Cincinnati, June 14.—Dealers in scrap are interested in railroad offerings and awards to a considerable degree this week. Sales are light, mostly additions to specifications with no demand for new shipments.

St. Louis, June 14.—Lack of consumer interest and weakness feature iron and steel scrap. Sales are confined to a few small tonnages. Further specific cuts were recorded, and in many instances prices are nominal, there having been no exchanges upon which to predicate accurate quotations. Heavy melting steel, reduced 25 cents per ton to $10.75 to $11.25, touched a new low. Short steel rails and some other specialties showed weakness, and a reduction of 50 cents per ton was made in agricultural malleable and railroad grate bars.

Birmingham, Ala., June 14.—Demand for iron and steel scraps has weakened and shipments are slow. Quotations are weak but no change has been made.

The Ohio State Foundrymen's association which has headquarters at 5713 Euclid avenue, Cleveland, recently revised its code of "Uniform Trade Customs," bringing it up-to-date to meet changing conditions. The code gives the relations which should exist between the buyer and seller of castings. Copies may be secured by addressing the secretary-manager, Arthur J. Tuscany.

Sheets

Shipments Heavy and Mill Operations Good—New Price Levels Not Yet Fully Tested

SHIPMENTS of sheets continue at a satisfactory rate, as consumers are specifying heavily on present contracts carrying prices lower than now in effect. Small-lot business for early forwarding is done at the new levels. The real test of prices is not expected until July. Valley mills report having more orders on their books than at any time since the high point in March.

SHEET PRICES, PAGE 1548

Boston, June 14.—The sheet market is quiet but prices are firmer. Prices for third quarter have been announced, with no changes from present level.

New York, June 14.—A number of third quarter contracts for sheets have been placed the past week, current prices governing. These are 2.25c, base, Pittsburgh, for blue annealed, 3.00c for black and 3.85c for galvanized. Buyers are assured they will benefit if lower prices develop. Most consumers continue to obtain present requirements on second quarter contracts.

St. Louis, June 14.—Ordering of sheets continues in fairly satisfactory volume, though large tonnage is not being placed. Most of the buying is for prompt shipment, and a considerable proportion is in the South. Demand for corrugated sheets in the flood areas is holding up well. The leading local producer is operating at about 65 per cent. Prices are steady, with a firmer tone on galvanized.

Chicago, June 14.—Buying of steel sheets shows no change from the small orders that have prevailed for some time, except in blue annealed. Consumers of the latter are furnishing enough orders to provide backlogs for several weeks. Operations remain at 85 per cent. The leading independent producer is operating all its ten mills at Milwaukee and its 18 at Indiana Harbor. Mills are taking third quarter business but have made no definite announcement of the opening of order books for that period. Specifications and shipments thus far in June are slightly ahead of May. Quotations are 3.10c, Gary and Indiana Harbor, for No. 24 black; 3.95c for galvanized and 2.35c for No. 10 blue annealed.

Detroit, June 14.—The new sheet prices seem to be holding generally. Such buying as there has been for third quarter has been based upon 4.25c, Pittsburgh, for autobody, 2.25c for blue annealed and 3.00c for black. No real tonnage requirements have been placed but those buyers who normally would be first to obtain concessions are understood to be preparing to specify for July shortly. Several large users may not contract for the quarter, content to specify monthly and file recent tenders on third quarter business as their protection. With many sheet mills May shipments into the Detroit district exceeded last May. The outlook is that June shipments will fall off from May. Extras are being maintained.

Buffalo, June 14.—Sheets seem in a strong position. The 3.00c, base, Pittsburgh, price of black sheets is maintained firmly as are the quota-

tions on other grades. Business is fair.

Philadelphia, June 14.—Sheet consumption continues good in the East, with mills operating at 65 per cent or better. New business is taken at full prices, and no exceptions are noted, although requirements generally are being satisfied with shipments on old contracts. The real test of the market is not expected until the later part of June. Heavy specifications are being received on second quarter contracts and in some instances deliveries will extend into the first week of July.

Pittsburgh, June 14.—Orders are improving for sheetmakers. Fully 95 per cent of these are adhering to the new base levels, namely 2.25c, 3.00c, 3.85c and 4.25c for blue annealed, black, galvanized, and full finished sheets, respectively. In some directions these levels are made to apply throughout the third quarter although so far third quarter contracting has not been extensive. While some price cutting is encountered, it is no more than usual. In some instances this takes the form of extensions to present contracts. Most of the third quarter contracting to date has been in connection with full finished sheets for the automotive industry. While some motor car builders are cutting down their schedules, such as Buick, Chrysler and Studebaker a number of others are increasing, such as Dodge and Hudson-Essex. A fair amount of blue annealed business has been booked for various purposes. Galvanized likewise are active for miscellaneous uses. Some buying for railroad cars and for car repair work is noted, and of late a fairly large tonnage of thin gage black sheets, mainly 30½ or 31-gage, has been booked for shipment to Japan. Much of this material is rolled on tin mills. American Sheet & Tin Plate Co. continues to operate between 75 and 80 per cent of sheet mills and that represents the general average operating condition.

Youngstown, O., June 14.—Sheetmakers in this district are receiving a steadily increasing inflow of new business in black, galvanzide and blue annealed. The mills have more tonnage on their books today than at any time since March which was the high mark for this year. Out of 127 independent sheet units in the district, 114 went into operation Monday night against 111 a week ago and 92 two weeks ago. Autobody sheet mills are operating at capacity this week and are scheduled similarly for all next week, the first announcement of the sort for two months. Prices are holding to the recently established levels of 3.00c for black, 3.85c for galvanized and 2.25c for blue annealed. The autobody sheet price of 4.25c also is steady. The recent division of 1200 tons of black sheets by the Solvay company among several makers at full price, and of 500 tons of barrel stock by the Standard Oil Co. at 3.10c for No. 28 gage, signifies the full strength of the market.

Cleveland, June 14.—Although third quarter books of most sheetmakers are open, little tonnage, except regular customer contracts, is being booked. Spot buying continues fair, and makers claim the June rate is above May. Sellers point the fact barrel buyers, usually obtaining $1 to $3 a ton concession, are paying the full 3.00c, Pittsburgh, price on black.

Tin Plate

Shipments Close to 1926 Figures—Pickup Anticipated

TIN PLATE PRICES, PAGE 1548

Pittsburgh, June 14.—Tin plate shipments for the first half to date are only about 4.5 per cent less than for the same period of last year, the largest year in history. Makers are confident the slight discrepancy will be more than made up during the last half, despite present forecasts that vegetable packs will require less tonnage than last year. Increased packing of fruit is expected to more than offset the drop in corn and peas.

Youngstown, O., June 14.—On open competition for a lot of 50,000 boxes of tin plate for last half delivery, which was divided between two concerns, it is conceded that 15 cents a box was lost by both through too great eagerness, which they say they are not likely to repeat soon. Generally, the market is $5.50 per base box, Pittsburgh, with the usual concessions for tonnage to large buyers. The market is expected from now forward to shape itself around this figure, with far more certainty than during second quarter purchasing.

American Sheet & Tin Plate Co. operated about 78 per cent of its tin mills last week. About 80 per cent is the general average. Price cutting is no more extensive than usual. Some western makers are encountering keen competition. As a rule $5.50 is the openly quoted market figure.

New York, June 14.—Further second half contracting was noted in the tin plate market the past week. Consumers in this territory now generally are covered until the end of the year.

Pipe

Mill Bookings Lighter But Prices Hold—Detroit Buys 3000 Tons of Cast Iron Pipe

HAMPERED by slow buying of oil country goods, tubular mill bookings are diminishing. A new factor in the market is noted with the reported award of 300 miles of 22-inch line pipe to a new maker, proposing to fabricate and weld cold skelp. Detroit has purchased 3000 tons of 36-inch cast iron pipe from a domestic maker in face of a low French bid.

PIPE PRICES, PAGE 1548 AND 1586

Pittsburgh, June 14.—Incoming pipe business has slowed down due to lack of oil country goods, but the aggregate tonnage coming to makers here and in the Mahoning valley territory holds up well. For large local producers new business is about 10 per cent less than for the same period last year, and 1926 was one of the heaviest tonnage years on record. No line pipe business has been placed since National Tube Co. received Prairie Pipe Line Co.'s award of 100 miles of 16-inch and 60 miles of 12¾-inch, or approximately 25,000 tons. The trade here understands that A. O. Smith Corp., Milwaukee, has received an order for a large pipe line, 300 miles of 22-inch, but it is not known whether this is the one to be installed by Standard Oil Co. of New Jersey or Texas Co. This Milwaukee interest proposes to bend the skelp cold and electric weld the seam, and the job if successful will mark its entry into the pipe field. Pipe mill operations still average 70 or 75 per cent. Standard full weight merchant pipe jobbers order sparingly as needed. Prices are firm.

Mechanical tubing, locomotive tubes, etc., are moving fairly well but seamless tube manufacturers await the return of automotive buying to release heavy tonnages. Most of the tonnage in this line goes to make up rear axle shafts and drive shafts, and the Ford Motor Co. business which has been lacking for some time, represents a large tonnage since these two parts on the model T car took 24 pounds per car, 14 pounds and 10 pounds respectively. The new model is not expected to take less and some producers expect July shipments to resume on a normal basis, or approximately 1500 tons monthly.

Boston, June 14.—Good volume of private cast iron pipe buying continues especially from the gas companies. Public business is about normal for this season. Prices show no change. The market is firm on small sizes up to and including 12-inch, with concessions on larger sizes.

New York, June 14.—Demand for merchant pipe here continues small as a result of strikes which are holding up building operations. The strike of plumbers on Long Island has not been settled although it is believed that this will be at an end soon. Building operations in New Jersey are being tied up as a result of a strike on the part of the electrical trade.

Cast pipe demand is devoid of large tonnages, reflecting seasonal influences. Prices are unchanged.

Chicago, June 14.—A number of important projects for cast iron water

pipe are expected to be announced shortly. Owing to recent unfavorable weather, and also to the suspension of some activity during the convention of the American Water Works association in Chicago last week, announcement as to bids in those instances has been deferred. United States Cast Iron Pipe & Foundry Co. has booked 3000 tons of 36-inch pipe for Detroit in competition with French bidders. Prices are irregular and recent business has not been such as to gage the market accurately. Judging by some recent orders the price of 6 to 24-inch pipe can be quoted in a range of $35 to $36.50, Birmingham, or $43.20 to $44.70, delivered Chicago. Denver is planning a 13-mile program of 66-inch water pipe, and a gas main is contemplated from Amarillo oil fields in Texas to Denver.

Birmingham, Ala., June 14.—Lettings are not so numerous nor for as large tonnages and the cast iron pipe trade is showing reductions. Soil pipe and fittings demand is slow. Pressure pipe production is being maintained on backlogs. Quotations are $34 to $35 for 6-inch and over sizes, with the market weak.

CONTRACTS PLACED

3000 tons, 36-inch pipe for Detroit, to United States Cast Iron Pipe & Foundry Co.
2000 tons, 24-inch water pipe, Metropolitan district supply commission, Boston, to Warren Foundry & Pipe Co., through A. Mogavero Contracting Co., Peabody, Mass.
1000 tons, cast iron pipe, Richmond, Va., reported awarded National Cast Iron Pipe Co.
431 tons, 4 to 12-inch class B and C, improvement to Harvard street, Seattle, to J. L. Smith.
368 tons, 6 to 12-inch class B and C, Eleventh avenue south, Seattle, to Interstate Construction Co.
200 tons, 3 to 24-inch fittings for Chicago, to American Cast Iron Pipe Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

881 tons, 6 to 16-inch, Linda Vista water development, San Diego, Calif.; bids in June 27.
400 tons, 6 to 14-inch, Revere, Mass.; bids in.
144 tons, 6 to 12-inch, Silverton, Oreg.; bids in.
100 tons, 2 to 6-inch class B, improvement of Texas street, San Diego, Calif; bids in June 27.

Triple Merger Approved

Officials of the Kokomo Steel & Wire Co., Kokomo, Ind., have authorized the announcement that the required number of stockholders of the three companies that are being merged into the Continental Steel Corp. have filed their approval of the consolidation. The other two companies are the Superior Sheet Steel Co., Canton, O., and the Chapman-Price Steel Co., Indianapolis.

Negotiations looking to the merger of some independent sheet mills in the Mahoning valley continue, but without definite results thus far.

Bars

Slight Gain in Demand Not Sufficient to Raise Tonnage or Prices—Deliveries Easy

CHICAGO and Pittsburgh barmakers find some increased demand for their product but not sufficient to increase operations or hold prices firmly. Chicago mills find competition from other centers is limiting its home territory where the full price can be maintained. Mill schedules are short and deliveries are easily met by all makers.

BAR PRICES, PAGE 1548

Chicago, June 14.—Despite a noticeable gain in inquiry for some lines of finished steel, particularly in bars, the lower levels of prices in the East continue to have a depressing effect on the 2.00c price for bars, plates and shapes in the Chicago district. Mills are holding to the 2.00c level for that share of the soft steel bar output absorbed in the immediate Chicago consuming territory. Most Indiana territory is closed to Chicago mills at this point. In points further west also, and in the southwest, mills are obliged to go to as low as 1.90c to meet competition. Sales of bars enjoyed a pickup during the week, that placed new buying on a higher scale than in any of the past four weeks. Orders for heavy finished products were more than 50 per cent heavier than the preceding week. Nevertheless, backlogs of soft steel bars have been reduced materially and both sales and specifications are unable to hold the pace with shipments. In certain instances bar consumption is holding to the best months this year. Several leading tractor manufacturers are enjoying steady business and one reports record production at this time. Farm equipment makers are more cheerful as to their fall business. Some fairly important sales of bars for third quarter have been made. Mills can give prompt delivery except on odd sizes.

Boston, June 14.—Sales of bars at Boston declined still further the past week and the market is dull. Prices remain unchanged at 1.85c, Pittsburgh, for small lots.

New York, June 14.—Prices on steel bars here average lower. The 1.80c, base, Pittsburgh, price now is being done with more frequency on attractive tonnages. The full market range continues 1.80c to 1.90c, base Pittsburgh. Demand for bars is only fair.

Buffalo, June 14.—The bar market lacks strength and is inclined to sag whenever there is talk of tonnage business being placed. The going price is 2.165c, Buffalo, but large consumers can do better than this. Steel works operation does not exceed 80 per cent of capacity.

Pittsburgh, June 14.—Merchant steel bar specifications are a trifle better than in the first week of the month and show an automotive influence. Cold bar finishers have taken more tonnage and car builders have been active. Spring makers have placed additional orders for alloy bars. Various other consumers have appeared among those specifying, but jobber orders have not been numerous. Mill operations still average 70 to 80 per cent, but mills are unable to line up anything beyond three or four days ahead although each day's order, seem sufficient to extend that schedule another day. The price usually named on small lots is 1.90c, with 1.85c applying on attractive tonnage.

Refined iron bar orders all are small. The aggregate for a week reaches fairly attractive proportions, but is made up of numerous small lots. Prices start at 2.75c.

Detroit, June 14.—The price of steel bars is relatively firmer than that for plates and shapes but has been disturbed somewhat by the efforts of two middle western mills to obtain complimentary orders. The general market is 1.85c, Pittsburgh. For some makers 1927 business to date is ahead of 1926, but the increase is melting away. June specifications from the automotive trade are somewhat lighter than those for May.

Cleveland, June 14.—Steel bars continue stronger than plates or shapes, with 1.85c, Pittsburgh, the general market for makers out of the district. Specifications have shrunk perceptibly the past week. Less tonnage is going to the automotive industry.

Philadelphia, June 14.—Steel bar prices now range from 1.80c to 1.90c, with 1.85c, Pittsburgh, the most frequently done.

Iron Ore

Market Quiet—Demand May Be Renewed in Fall

IRON ORE PRICES, PAGE 1582

Cleveland, June 14.—Some users of Lake Superior iron ore will require additional tonnage later in the season, they indicate, but active new demand is lacking. Receipts at lower lake ports in May increased, as shown by the following tonnages:

	May, 1927	Season
Buffalo	461,631	523,903
Erie	179,329	206,681
Conneaut	1,223,433	1,416,326
Ashtabula	1,112,283	1,317,468
Fairport	283,365	324,368
Cleveland	901,232	970,065
Lorain	486,222	573,550
Huron	169,302	197,719
Toledo	152,422	171,907
Total	4,969,219	5,701,987
Last year	3,337,888	3,337,888

Structural Shapes

Consuming Districts Report Demand Either Well Maintained or Increasing—New York-New Jersey bridge to take Large Tonnage

DESPITE the lack of heavy tonnage projects in the market in the past week, structural steel demand continued on its high plane. Demand is reported as equaling or exceeding the May rate. New inquiries include 5000 tons for a grandstand at Arlington, Ill., and the New York-New Jersey bridge over Hudson river, on which alternate bids will be taken, requiring 125,000 to 136,000 tons. The bulk of present inquiry is for small lots.

Plain material prices continue to show softness, and little third quarter contracting is being done, neither buyers nor sellers being anxious to commit themselves at present prices. Fabricated prices continue subject to keen competition and extensive shading.

STRUCTURAL SHAPE PRICES, PAGE 1548

New York, June 14.—Structural demand for the past week has been fairly well maintained. Prices on fabricated and plain material are unchanged, with the latter holding around 1.70c to 1.85c, Pittsburgh, on sizable work.

Bids on 125,000 to 136,000 tons for New York-New Jersey bridge, the largest suspension bridge in the world, likely will be asked shortly. Approval of the engineers' report by the commission of port authorities is expected within ten days following which bids will be asked in short order. According to present plans, bids for structural steel and alternate bids for I-bar link and cable suspension will be asked, both separately and as a complete unit. Preliminary estimates place the I-bar tonnage around 70,000 tons, and cable tonnage, should it be used, at approximately 50,000 tons. Towers are estimated to involve 36,000 tons and suspended structural 30,000 tons.

Structural steel board of trade reports 33,553 tons placed in the metropolitan district in May as against 54,200 tons in April. This is exclusive of bridges, piers, subways, etc.

Philadelphia, June 14.—Fair bookings continue to be reflected in structural steel. Plain material prices are unchanged from 1.70c to 1.85c, Pittsburgh, but the average tends somewhat lower. American Bridge Co. has booked the building for the General Electric Co. at Sixty-eighth and Elmwood streets requiring 1000 tons of structural steel. This is to be entirely welded and will be the first all-welded structure in the East. This has attracted great interest not only because it is to be all welded but also because the building is of typical mill design.

Pittsburgh, June 14.—Building programs which slowed up somewhat in May are getting under way again and by the beginning of July structural awards are expected to reflect a vastly improved condition. While many of the structures projected are small, the aggregate tonnage will be heavy. Lettings of the week are of limited proportions but some of the larger size are expected to materialize before the week is out. Plain shapes in the usual run of orders are quoted at 1.90c, but attractive lots carry figures as low as 1.80c.

Boston, June 14.—Leading factors in the structural field report a substantial business in small contracts but a great dearth of larger work. Bids are being taken on steel for new South Meadow station of the Hartford Electric Light Co. Prices in the structural field hold at 1.75c, Pittsburgh, or 2.115c delivered.

Cleveland, June 14.—Structural steel sentiment is improving, and more small tonnage projects are up. Third quarter contracting is slow in materializing and makers are naming from 1.85c to 1.90c, Pittsburgh, depending upon the quantity and attractiveness of the business.

Detroit, June 14.—Competition for business in shapes, including special sections, is extremely sharp. For one thing, this is because water shipments from Buffalo are possible. Structural activity in general is falling short of 1926. The 7000 tons for the First National Bank building addition, for which bids are in, is the leader in activity. Plain material figures back to 1.80c to 1.85c, Pittsburgh.

Chicago, June 14.—Structural steel awards consist mostly of small lettings. New inquiries total 7000 tons. Two or three important projects now are active and may be awarded shortly. This is the flood light tower to be erected in Grant park, Chicago, as a part of the Chicago centennial exposition in 1933. The 2.00c price for plain material has been weakened somewhat by the settling of the price for heavy finished steel in the East.

Awards Compared

	Tons
Awards this week	35,900
Awards last week	25,147
Awards two weeks ago	18,499
Awards this week in 1926	28,757
Average weekly awards, May	31,932
Average weekly awards, 1927	34,884
Total awards to date, 1926	691,299
Total awards to date, 1927	838,234

CONTRACTS PLACED

6000 tons, New York Athletic club, New York; awarded through Post & McCord, previously noted as receiving erection contract, to American Bridge Co.

4575 tons, involved in following awards:
- 18-story loft, 130 West Thirtieth street, New York.
- 14-story loft, 227 East Forty-ninth street, New York, both to Harris Structural Steel Co.
- Holy Trinity school, 212 West Eighty-third street, New York, to George A. Just Co.
- Alterations to Benenson store building, 165 Broadway, New York.
- 10-story building for Ludwig Baumann & Co., Hoyt and Livingston streets, New York, both to Hay Foundry & Iron Works.

4000 tons, Engineers' club building, Chicago, to American Bridge Co.

2800 tons, Santa Fe railroad shop additions at Cleburne, Tex., to McClintic-Marshall Co.

2400 tons, Wilkeshire building, Philadelphia, to Shoemaker Bridge Co.

2100 tons, bridge over Missouri river at Bellefonte, Mo., to American Bridge Co.

1800 tons, bridge, Steubenville-Weirton, W. Va., to Dravo Contracting Co.

1650 tons, municipal bridge over Bronx river, New York, to McClintic-Marshall Co.

1300 tons, Victor building, Buffalo, to R. S. McMannus Steel Construction Co.

1075 tons, apartment, University place and Tenth street, New York, to Easton Structural Steel Co.

1000 tons, three theaters, New York, to George A. Just Co.

1000 tons, General Electric Co., Sixty-eight and Elmwood streets plant, Philadelphia, to American Bridge Co.

1000 tons, theater, Rochester, N. Y., to McClintic-Marshall Co.

925 tons, 16-story apartment, 58 East Ninety-sixth street, New York, to Hinkel Structural Steel Co.

800 tons, Kress building, Portland, Oreg., to Poole & McGonigle.

800 tons, Busher office building, Cortlandt avenue and 149th street, New York, to M. C. Norton.

700 tons, 15-story apartment, Eleventh street and Second avenue, New York, to Dreier Iron Works.

500 tons, lumber mill building at Tampa, Tex., to Kansas City Structural Steel Co.

500 to 1500 tons, tunnel supports, Lehigh Valley railroad, to Bethlehem Steel Co.

500 tons, including 95 tons for Boston Mills, O., highway bridge, and eight or nine other projects, to Forest City Structural Steel Co.

470 tons, 16-story apartment, 71 Washington Square, New York, to Dreier Iron Works.

375 tons, plant addition for Grasselli Chemical Co. at Grasselli, N. J., to McClintic-Marshall Co.

350 tons, school, Thompson and Montgomery streets, Philadelphia, to McClintic-Marshall Co.

300 tons, 12-story building, 14 West Thirtieth street, New York, to M. C. Norton.

285 tons, church, University avenue, Bronx, N. Y., to Kues Bros.

275 tons, hospital, New Brunswick, N. J., to American Bridge Co.

275 tons, plate girder spans for Pere Marquette railroad to the American Bridge Co.

250 tons, 10-story apartment, 117 East Seventy-seventh street, New York, to Bethlehem Fabricators Inc.

250 tons, building for Grinnell Co. Inc., Chicago, to Butler Street Foundry Co.

250 tons, alterations on Fulton avenue, Hempstead, Long Island, N. Y., to Hay Foundry & Iron Works.

250 tons, church, Berkeley, Calif., to Pacific Coast Engineering Co.

250 tons, state reconstruction work, Fishkill, N. Y., to Bethlehem Steel Co.
250 tons, plant for Agar Mfg. Co., Somerville, N. J., to unstated fabricator.
250 tons, bridge for Philadelphia & Reading railroad, to Shoemaker Bridge Co.
220 tons, loft building, Mission between Eighth and Ninth streets, San Francisco, to Pacific Rolling Mill Co.
220 tons, 4-story office building, Far Rockaway, N. Y., to National Bridge Co.
200 tons, miscellaneous work including 125 tons for bank in Saginaw, Mich., to Guibert Steel Co.
175 tons, city hall, Mt. Vernon, N. Y., to Peerless Iron Works.
160 tons, building for Hills-McCanna Co., Chicago, to Gage Structural Steel Co.
155 tons, *Mercury-Herald* building, San Jose, Calif., to Golden Gate Iron Works.
150 tons, apartment, Broadway and Gough streets, San Francisco, to Golden Gate Iron Works.
150 tons, elevated railway platforms, New York, to American Bridge Co.
150 tons, state bridge, New Jersey, to American Bridge Co.
115 tons, alterations to court house, White Plains, N. Y., to McDougall & Potter.
100 tons, Philadelphia Savings fund building, Philadelphia, to Belmont Iron Works.
100 tons, building for O. N. Edwards Co., Syracuse, N. Y., through H. K. Ferguson Co., Cleveland, builder, to Lackawanna Steel Construction Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

5000 tons, grand stand, for the National Jockey club, at Arlington, Ill.; bids asked.
2500 tons, printing building, Eighth avenue, New York.
2000 tons, approximate, New York Central railroad work, Buffalo; Walsh Construction Co. general contractor. Noted last week as unstated tonnage.
2000 tons, 13-story apartment, 1060 Fifth avenue, New York.
1400 tons, labor bank, Jersey City, N. J.
1000 tons, Dwight P. Robinson apartment, Eighty-seventh street, New York.
1000 tons, 11-story apartment, Lexington avenue between Eighty-eighth and Eighty-ninth streets, New York.
1000 tons, Lees Ferry bridge, Phoenix, Ariz.; Kansas City Structural Steel Co. low bidder.
1000 tons, apartment, 119 East Seventy-second street, New York.
900 tons, Morewood Gardens apartment house, Pittsburgh; general contract awarded W. T. Grange Construction Co.
850 tons, municipal power station, Jacksonville, Fla.
800 tons, City Courts building, Buffalo; low bidder refused contract, probably involving reletting.
800 tons, sheet piling for dam at Lovelock, Nev.; bids being taken.
800 tons, office building, 140 Ninth avenue, New York.
700 tons, baseball stand, Rochester, N. Y.
700 tons, 9-story apartment, 52 Clark street, Brooklyn, N. Y.; previously noted as involving unstated tonnage.
600 tons, municipal utility service building at St. Louis; bids to be received soon.
600 tons, apartment, 79 East Seventy-ninth street, New York.
500 tons, Monongahela National Bank building, Pittsburgh; bids close June 25.
500 tons, James Stewart apartment, Seventy-ninth street, New York.
500 tons, apartment, Fourth avenue and President street, Brooklyn, N. Y.
400 tons, Woodward high school, Toledo, O.; action deferred.
300 tons, John Hopkins hospital, Baltimore.
250 tons, St. Dennis parochial school, Yonkers, N. Y.
200 tons, creamery building at Cameron, Wis.; bids to be received soon.
190 tons, apartment, Hyde near Greenwich, San Francisco; bids being taken.
150 tons, superstructure, Boston & Maine railroad locomotive repair shop, Springfield, Mass.
150 tons, bridge for Baltimore & Ohio railroad.
150 tons, public school, Miami, Fla.
125 tons, Regent Square grade school, Pittsburgh; bids being taken.
100 tons, Masonic temple, Portsmouth, O.; bidding time extended until June 20.
100 to 250 tons, grade elimination work, Pennsylvania railroad, Toledo, O.
100 tons, miscellaneous work, including 70 tons for Monongahela Railway Co. freight house, Brownsville, Pa., to be placed through H. K. Ferguson Co., general contractor.
100 tons, structural steel for Los Angeles; Pacific Coast Steel Co. low bidder.
Unstated tonnage, Charity hospital, Cleveland; plans out.

The British Empire Steel Corp., Halifax, N. S., is to retire all outstanding stock with an issue of 1,000,000 shares of no par value.

Metal Year Book Issued

The American Bureau of Metal Statistics has issued its seventh Year Book, showing production, consumption and other statistics of principal metals in the industrial countries of the world. Most of the work is original, but credit is given to the government and various other organizations like the American Zinc institute, and in the case of iron and steel production and steel distribution the reports of IRON TRADE REVIEW are used.

Concrete Bars

Sears, Roebuck & Co. 4000-Ton Award Features Market —Inquiries Are Numerous

AWARD of 4000 tons for the Sears, Roebuck & Co. warehouse and store building at Minneapolis features the concrete reinforcing bar market of the week. This is the largest concrete job to be placed in many months. Inquiries continue numerous, but the bulk of current work is for small tonnages. Prices for billet steel at Chicago are subjected to severe shading.

REINFORCING BAR PRICES, PAGE 1548

Chicago, June 14.—Sharp competition has demoralized temporarily the market on billet reinforcing bars, as low as 2.10c, Chicago, being done and the general average for 100-ton jobs and larger taking a price of 2.15c. The weakness is slight for small tonnages. Awards of reinforcing bars in the past week have held up strongly, despite the price, and prospective awards are promising. Sears, Roebuck & Co. awarded 4000 tons for a new warehouse and retail store at Minneapolis, and a printing house in Chicago placed 800 tons. The rail steel price also is somewhat weaker, 2.00c, Chicago, being done on several large jobs recently.

Boston, June 14.—Concrete bar demand is dull so far as immediate delivery is concerned. A slight activity exists in fall orders and although small individually, in the aggregate they run into fair tonnage. Prices remain 1.90c, base, Pittsburgh, with warehouse prices from 2.80c to 2.90c.

Pittsburgh, June 14.—Sellers among the reinforcing concrete bar fabricators are adhering to the 1.90c mill price. Occasionally 1.85c is developed on a particularly attractive lot. Awards lately have been few, involving relatively small tonnages. Some more attractive ones are before the trade, a large number of buildings involving 5 to 500 tons each being projected. Road work is scarce in Pennsylvania although some let in New York recently has involved appreciable tonnages.

Buffalo, June 14.—After a brief flurry of buying the reinforcing bar market has eased off and contractors are covering inquiry slowly. A single 100-ton lot was placed last week in this market. The mill shipment price is unchanged at 2.165c, but most business is being taken for stock shipment around 2.65c, Buffalo.

Cleveland, June 14.—Developments in the concrete bar market the past week were confined to a few small inquiries and awards. Although upwards of 5000 tons of bars is pending in the territory total awards of the week are estimated not to exceed several hundred tons. Competition continues keen on a price basis, quotations ranging from 1.80c, Cleveland, to 1.90c, Pittsburgh.

Awards Compared

	Tons
Awards this week	8,780
Awards last week	2,710
Awards two weeks ago	13,148
Awards this week in 1926	2,756
Average weekly awards, May	5,491
Average weekly awards, 1927	5,265
Total awards to date, 1926	135,456
Total awards to date, 1927	129,875

CONTRACTS PLACED

4000 tons, warehouse and retail store building in Minneapolis, for Sears, Roebuck & Co., Chicago, to unstated maker.
800 tons, billet steel, new unit, Cuneo Press, Inc., Twenty-second street, Chicago, to Concrete Engineering Co.
600 tons, school, Thompson and Montgomery streets, Philadelphia, to American Steel Engineering Co.
550 tons, billet steel, foundations, 333 North Michigan building, Chicago, through Hegeman-Harris Co., Inc., 431 North Michigan avenue, contractor; to Kalman Steel Co.
350 tons, Cincinnati Wholesale Grocery building, Pearl and Pike streets, Cincinnati, to Pollak Steel Co.
350 tons, rail steel, building for Cheek-Neal Co., 2133 West Pershing road, Chicago, to Calumet Steel Co.
325 tons, billet steel, garage, 5050 Broadway, Chicago, to Barton Spider-Web System.
210 tons, billet steel, warehouse, Twenty-first and Sawyer, Chicago, to Olney J. Dean & Co.
200 tons, reservoir, Mansfield, O., through Rice-Jones Co., Cleveland general contractor, to Republic Structural Iron Works.
200 tons, bridge and road work in western New York, to Truscon Steel Co.
200 tons, repairs to Music hall, Cincinnati, to Pollak Steel Co.
180 tons, Gill Virden Co. building, Philadelphia, to Concrete Steel Co.

170 tons, billet steel, public school, Sixty-ninth and Fairfield, Chicago, to Olney J. Dean & Co.
160 tons, billet steel, filtration plant, Glencoe, Ill., to Concrete Engineering Co.
160 tons, billet steel, apartment hotel, 629 Deming place, Chicago, to Barton Spider-Web System.
125 tons, billet steel, building for Vette & Zuncker Co., 212 South Green street, Chicago, to Olney J. Dean & Co.
100 tons, miscellaneous work including Dixmont, Pa., filtration plant, to Carlem Engineering Co.
100 tons, California avenue bridge to Kalman Steel Co. instead of Concrete Steel Co. as reported last week, through John F. Casey Co.
100 tons, Randall apartments, 6928 Wayne avenue, Chicago, to Concrete Engineering Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

2500 tons, Coolidge dam, Ariz.; bids in July 17.
300 tons, school Mifflin and McKean streets, Philadelphia.
230 tons, Wallace Storage building, Philadelphia.
200 tons, Morewood Gardens apartment house, Pittsburgh; general contract awarded W. T. Grange Construction Co.
150 tons, building for associated doctors in connection with West Penn hospital, Pittsburgh; bids to be asked in July.
150 tons, building for International Harvester Co. at Cleveland; bids being taken.
100 tons, building for Ambridge Savings & Trust Co., Ambridge, Pa.; bids being taken.
100 tons, Monongahela National bank building, Pittsburgh; bids being taken.
100 tons, high school, Wilkinsburg, Pa.; bids being taken.
100 tons, Regent Square grade school, Pittsburgh; bids being taken.
100 tons, high school, Wellsburg, W. Va.; bids being taken.
100 tons, Bonzo apartment house, Fair Oaks, Pa.; bids being taken.
100 tons, United Presbyterian and Presbyterian church, Mt. Lebanon, Pa.; bids being taken.
100 tons, building for Phillips Gas & Oil Co., Butler, Pa.; bids being taken.
100 tons, addition to Oliver high school, Pittsburgh; bids being taken.

Refractories

Slackness in Steel Demand Reflected in Lessened Brick Sales

REFRACTORIES PRICES, PAGE 1584

Pittsburgh, June 14.—Slackening in iron and steel is transferred to refractories, and buying is light. Makers of fire clay and silica brick report that in recent months their business has reversed itself—that where they formerly stocked up their customers, now their customers stock them. No consumer is purchasing more than actual necessities and all orders are placed for quick shipment. The brick maker therefore has to carry a large stock. Prices on the quoted bases are firmer than for two years. Incoming orders usually involve single carloads, or 50,000 to 100,000 brick and apparently are only sufficient to maintain June kiln operations at 60 to 70 per cent. Some coke oven business is pending but other new construction is lacking.

The Pittsburgh foundrymens' association will hold its annual stag outing on the afternoon and evening of June 20 at Turner park, Perrysville, Pa.

Rails, Cars

Equipment Activity Scattered Except for Several Attractive Locomotive Inquiries

UNBROKEN by any transactions of unusual size or importance, the railroad equipment market was dull in the past week. Contemplated purchases by several railroads of large lots of locomotives form the only prospective business of size. Some small lots of rails and track accessories are being placed. Rail mills in Chicago district face decreasing operations.

RAILROAD TRACK MATERIAL PRICES, PAGE 1548

Chicago, June 14.—Inasmuch as secondary buying of rails gives no prospect of important volume, rail mill operations are expected to point downward soon. They are continuing slightly under 80 per cent. An eastern road placed about 3000 tons with Chicago mills during the week, in addition to its primary order.

Considerable track fastenings inquiry is out and mills have booked a number of miscellaneous orders which totaled about 1000 tons of tie plates and angle bars in addition to spikes and track bolts. Mill units engaged in production of tie plates, which have been at maximum capacity for several weeks, now are slowing down their activity. Track fastening operations for the district are about 75 per cent.

New York, June 14.—Following the placing of substantial orders last week, the car market is quiet, both orders and inquiries being scattered. Locomotive buying is featured by several fairly large inquiries.

Pittsburgh, June 14.—Light rail orders from coal mines keep coming in from active coal producing centers. This past week additional business developed in West Virginia and among western Pennsylvania bituminous coal mine operators. This business was done at $36.

Track accessories are quiet, incoming business being confined mostly to single carload quantities, or smaller. Makers are confident that larger inquiries and orders are in the formative stage, this being the time for railroads and other large users to line up their "second lot" buying of the year. All prices are firm.

CAR ORDERS PLACED

Amtorg Trading Corp., New York, 25 dump cars, to Koppel plant of the Pressed Steel Car Co.
Pennsylvania, 12 flat cars, to own shops.
Philadelphia & Reading, 15 steel baggage cars, 10 to American Car & Foundry Co. and 5 to Bethlehem Steel Co.
Union Pacific, six automatic air dump cars, to Western Wheeled Scraper Co.

LOCOMOTIVE ORDERS PLACED

Amtorg Trading Corp., three saddle-tank locomotives, to American Locomotive Co.
Chicago & Illinois Midland, two freight locomotives, to Baldwin Locomotive Works.
Johnstown & Stony Creek, one switch engine, to Baldwin Locomotive Works.
Kansas, Oklahoma & Gulf, five locomotives, to Baldwin Locomotive Works.
Lehigh & New England, six switch engines and two decapod-type locomotives, to Baldwin Locomotive Works.
Peoria & Pekin Union, three switch engines, to Baldwin Locomotive Works.
Peruvian government, two locomotives, to Baldwin Locomotive Works.
Usina Junqueira, Peru, one locomotive, to American Locomotive Co.

CAR ORDERS PENDING

New Inquiry and Developments on Projects Previously Reported

Chicago, North Shore & Milwaukee, 20 motor interurban cars.
Chicago, Rock Island & Pacific 100 gondola bodies.
Haitian-American Corp., unstated number of cane cars.
H. C. Frick Coke Co., 879 mine cars; inquiry withdrawn.
Norfolk & Western, 25 mail storage cars; bids in June 22.

LOCOMOTIVE ORDERS PENDING

Missouri-Pacific, 10 locomotives; bids being taken.
Pennsylvania, 100 locomotives; contemplated, although no formal inquiry is out.
Pittsburgh & Lake Erie, 45 to 50 locomotives contemplated, although no formal inquiry is out.

Resume Rate Hearing at Atlantic City

Atlantic City, N. J., June 14.—New England railroads are expected to begin Wednesday putting in their revised freight rate schedules on finished iron and steel materials before Commissioner Johnson B. Campbell, of the interstate commerce commission. The steelmakers and shippers also will submit evidence in rebuttal on the Trunk Line and Central Freight association rate schedules submitted at the previous hearings at Pittsburgh, Columbus, O., Detroit and Chicago. This will be the fifth and final session of the series. After arguments likely to be submitted before the full commission at Washington in September, the commission hopes to be able to make final decision by the end of this year.

Vesta Reopens Soon on Nonunion Basis

Pittsburgh, June 14.—Intention of the Vesta Coal Co., subsidiary of the Jones & Laughlin Steel Corp., to reopen its mines on an open-shop basis within a few weeks was announced Saturday with the posting of a new wage scale. The Vesta company, which employs 3000 men normally and delivers its output to Jones & Laughlin, shut down April 1 when the bituminous suspension began.

Wire

Demand Fairly Steady and Prices Unchanged—Nails Meet Some Difficulties

LITTLE change has taken place in the wire and nail market. Specifications, sales and price are about the same as has been the case for some time. Nails are somewhat less in demand with various causes attributed. Backward weather has had some effect on country demand. Makers believe lower prices would not stir buying.

WIRE PRICES, PAGE 1548

Chicago, June 14.—The wire and wire products market here is unchanged. Prices are stationary, with steady, diversified demand. June is opening up below April, but about on a par with May. Buying by country dealers and jobbers is at a good pace, and wire fencing manufacturers show strength in their specifications. No change is noted in the base prices of 2.45c, Chicago, on plain wire, and 2.55c on carload lots of wire nails.

Worcester, Mass., June 15.—The wire market is slow. Earlier season requirements which have held up well are filled and new orders for repeat needs have not developed into volume. This is reflected in drawing operations, which are off 5 and 10 per cent from a month ago. Prices, however, have not weakened on most specifications or plain wire, sellers feeling that the recession is economic and that business would not be stimulated by price reductions. The quoted price remains 2.55c, Worcester.

Pittsburgh, June 14.—Wire products makers report a good movement of wire for varied lines of manufacture, but nail orders are scarce. Tonnage each week is not sufficient to enable operations to expand, and schedules are 50 to 60 per cent. Occasionally a carload of nails is specified in mixed sizes, including some cement coated nails. Jobbers are not turning over their stocks rapidly, feeling the effects of a backward season. Nailmakers report the trend toward all-metal buildings and fireproof construction is holding down demand for nails. Other large producers claim that small nailmakers are taking orders direct which usually came to them through jobbers, and thus their tonnage outlet in that direction is lowered. Prices are firm, namely 2.40c on plain wire and $2.50 on wire nails.

Detroit, June 14.—Buyers of wire not in the tonnage class continue to pay 2.40c. Pittsburgh. Specifications from the automotive industry for June show a decline from May. Shipments to other users show little change from May or last June.

Window Standards Out

Washington, June 14.—Acceptance blanks are being sent to consumers, technical experts, distributors and manufacturers of solid section steel windows in connection with the simplification program adopted at the April meeting held in this city under the auspices of the national committee on metals utilization. It is proposed that the simplification become effective Sept. 1.

Bolts, Nuts, Rivets

Higher Prices for Third Quarter Rivets Are Expected

NUT AND BOLT PRICES, PAGE 1548

Cleveland, June 14.—Higher prices are expected on rivets in the third quarter. The leading interest here reports new contracts will carry a price of 3.00c a pound, Cleveland or Pittsburgh, for structural rivets and 70 per cent off base for small rivets. Current prices on bolts and nuts will hold on new bookings. Contracting for third quarter has not yet started. Operations are showing no more than seasonal decline.

Pittsburgh, June 14.—Miscellaneous buying over a widely scattered area is keeping nut and bolt mills alive. Each order is small, numerous less-than-carload quantities interspersed with an occasional single carload. Jobbers are ordering sparingly to replenish stocks. It is claimed that the 70 off discount is universally respected. Rivet business is better from railroad car shops and structural steel fabricators, including barge builders. The 2.75c figure prevails.

Chicago, June 14.—Operations of bolt and nut producers are about 60-65 per cent, with rivet manufacturing operations at about 75 per cent. Implement manufacturers continue with a scattered demand, whereas automotive demand remains fairly heavy. Third quarter contracts have gone out for signing on the same price basis as second. Specifications are equal to or slightly less than in May, but the situation is firm.

Detroit, June 14.—Some sellers of bolts and nuts report shipments for June to date heavier than for May, but this represents aggressive selling rather than broadening of demand. For the district as a whole consumption this month is falling behind May. Tonnage needs elicit commensurate prices but for the general trade 70 off list holds.

Philadelphia, June 14.—Rivets reflect a stiffer price trend. Prices under 2.75c, Pittsburgh, have practically disappeared and in some quarters an advance of at least $2 is expected about July 1. Bolt and nut demand continues steady, with no exceptions to the 70 per cent discount. Makers report the largest number of small orders they can remember. Preparations are under way to cover consumers for third quarter at 70 off.

Strip Steel

Better Contracting Has Been Done for Third Quarter Delivery

STRIP PRICES, PAGE 1548

Pittsburgh, June 14.—Contracting for third quarter in hot and cold strip steel has been active for several days. Larger buying has been done by various automotive interests, including Dodge Bros., and other consumers have followed suit. Hoop and band business is fairly extensive. Strip steel shipments are about 5 per cent ahead of last month, but new business is about the same. Operations average 70 to 80 per cent.

Detroit, June 14.—Advances in cold-rolled strip have not gone over as easily as those in sheets. This applies particularly to the fender sizes. Buyers are quoted as conceding the merit of a moderate advance, but are unwilling to pay the $8 to $9 rise per ton of some makers in some classifications. Hot strip is holding steady. Demand for both grades is fair.

Cleveland, June 14.—Hot and cold rolled strip steel are moving at an unchanged pace. Spot buying is in heavy volume or hot strip, but contracting for third quarter is being delayed. Hot strip under 6-inch is steady at 2.30c, Pittsburgh, and 6 to 12-inch at 2.10c. Carload sales of cold rolled strip at 3.00c, Pittsburgh, are more numerous, although smaller lots continue placed with the recently adopted quantity differentials applying.

Cold Finished Steel

Small Lot Buying Continues in Good Aggregate Volume

COLD FINISHED PRICES, PAGE 1548

Pittsburgh, June 14.—Cold bar finishers are slightly more active, with more automotive tonnage accumulating. Operations have not advanced, remaining at about 65 or 70 per cent. Several finishers report that while individual orders are small, the aggregate is good. Some customers are buying lightly to keep down mid-year inventories. The usual quotation on ordinary lots is 2.40c, attractive business taking 2.30c.

Mineral production in Oregon in 1926 included 296,454 pounds of copper and 11,549 pounds of lead.

Nonferrous Metals

Easier Tone Develops in Market After Show of Strength Early in Month—Prices Slip Off as Uncertainty Grows

Prices of the Week, Cents a Pound

	Copper, Electro delivered	Copper, Lake delivered	Copper, Casting refinery	Straits Tin, New York Spot	Straits Tin, New York August	Lead, New York	Lead, East St. Louis	Zinc, St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
June 8	12.75	12.80	12.50	67.87½	64.62½	6.50	6.17½	6.27½	25.37½	12.37½	35.00
June 9	12.70	12.80	12.50	67.75	64.50	6.50	6.17½	6.22½	25.37½	12.25	35.00
June 10	12.62½	12.80	12.50	67.87½	64.62½	6.45	6.17½	6.22½	25.37½	12.25	35.00
June 13	12.62½	12.80	12.45	67.87½	64.62½	6.45	6.15	6.25	25.37½	12.25	35.00
June 14	12.62½	12.80	12.45	67.75	64.37½	6.42½	6.15	6.27½	25.37½	12.25	35.00

NEW YORK, June 14.—A little more uncertainty prevailed in the nonferrous metal markets in the second week in the month after much strength in the first week. The past two weeks have seen better buying in several of the metals than in some little time. However, the buying has not amounted to a major movement and the response in a price way, especially in copper, has been less than many expected.

No fundamental change in the market situation has developed. Production has changed little in the past few months, and continues at an extraordinarily high level. Consumption in this country has slipped off a trifle. On the other hand, the outlook for business usually is more important in price considerations than the current actual use.

Copper—The red metal has slipped off in an idle market the past few days, not because producers in general have been pushing the metal but because here and there a lot was offered down and then some producers became willing to accept shaded bids. The metal available in this way was more than equal to the light demand. Deliveries of copper have been running larger than average in the past few months, but the electric industry is taking wire and bus bar at a little lower rate than last year. Exports have increased to an average several thousand tons per month more than the average of last year. At the same time output has been cut a few thousand tons in the past few months, but the latter movement has not been as effective in strengthening the market. Mill products have been unchanged lately.

Zinc—In the past few days zinc has changed a little, being alternately easy and firm. In the past two weeks or so it has recovered about one-fourth cent from the low point. Buying has not been much more active, but the Joplin mines have curtailed output and have been unwilling to sell very much ore at the current prices. Deliveries of zinc in the last half of May increased after having been unusually light. This has been a factor in the recovery. High grade zinc has shown practically no change for a number of weeks.

Tin—The outstanding fact in the tin market is the extreme premium of about 2 cents that persists on nearby metal over July arrival. Supplies available this month in the domestic market are unusually light. The visible supply of the world increased last month and unusually large shipments from the Straits are expected this month but the level of forward positions has been fairly well maintained. Some dealers have been short on June tin and that is an important reason for present strength. At the same time it has appeared in the past week or two that consumers were not well protected beyond June, and so the importers and those who have held tin have been able to turn the market to their advantage lately despite more liberal statistics in a period when consumption is a little light.

Lead—Some lead has been sold at a premium in the past week or ten days and the market as a whole has done more business in proportion to the length of time than in any other period for quite a while. In past years such buying probably would have sent the entire market level up but the danger of shortage that consumers feared in other years has been removed by the continued expansion in output and the somewhat lower consumption. Premiums have eased lately with less urgent buying.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	17.75
Copper, hot rolled	21.50
Lead full sheets (cut ¼c more)	10.25
Zinc, (100-pound base)	9.75
Aluminum, bright flat, up to 10 gage	35.50
SEAMLESS TUBES	
High brass	22.62½
Copper	23.50
RODS	
High brass (round ⅝ to 2½-in.)	15.50
Naval brass	15.25
WIRE	
Copper, small lots	14.62½
High brass	16.25

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	9.00
Chicago	9.00
Cleveland	8.75 to 9.00
HEAVY YELLOW BRASS	
Chicago	6.50 to 6.75
Cleveland	6.75 to 7.00
ZINC	
New York	3.75 to 4.00
Cleveland	3.50 to 3.75
HEAVY COPPER AND WIRE	
New York	10.50
Boston	10.25 to 10.50
Chicago	9.75 to 10.00
Cleveland	10.00 to 10.25
RED BRASS BORINGS	
New York	8.00
YELLOW BRASS TUBING	
Cleveland	7.00 to 7.25
LIGHT COPPER	
New York	9.00
Chicago	8.50 to 9.00
Cleveland	8.75 to 9.00
LIGHT BRASS	
Boston	5.00 to 5.25
Chicago	6.00
Cleveland	6.00 to 6.25
ALUMINUM	
Clippings, Cleveland	18.00
Borings, Cleveland	9.00
Cast, Cleveland	13.50
Cast, Boston	13.50 to 14.00

Secondary Metals

Remelt aluminum No. 12	18.50 to 19.50
Brass ingot, 85-5-5-5	11.75 to 12.00

Coke By-Products

Toluol and Xylol Lead Demand for By-Products—Prices Unchanged

New York, June 14.—Light oil distillates are unchanged, with pure and 90 per cent benzols firm at the recently reduced price of 23 cents, works, for tank car lots and 28 cents for drums. Principal demand is in toluol and commercial xylol, the latter being purchased by paint and lacquer manufacturers as a partial substitute of toluol, which is especially scarce. Demand for sulphate of ammonia is quiet, particularly for export. As a result, the export market is largely nominal. Sulphate for domestic shipment is unchanged at $2.40, delivered. Steadiness also dominates naphtha, which is quiet and unchanged.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contracts
Pure benzol	$0.23	
90 per cent benzol	0.23	
Toluol	0.35	
Solvent naphtha	0.35	
Commercial xylol	0.36	
Phenol	0.22	0.22
Per Pound at Producers' Plants		
Naphthalene flakes	0.05½ to 0.06⅓	
Naphthalene balls	0.06½ to 0.07⅓	
Per 100 Pounds Delivered		
Sulphate of ammonia	$2.40	

Warehouse

Seasonal Influences Blamed as June Sales Fail to Pick Up from Slump in May—Prices Marked by Steadiness

SALES of most iron and steel warehouses in the first two weeks of June were disappointing. A decided improvement was expected over May, but in some cases business is running behind. Stability of price is encouraging to both buyer and seller, few revisions in the quoted list being made.

Warehouse demand in the New York metropolitan district continues to reflect seasonal influences, trading showing further decline from a week ago. Business is still fairly active and most prices are steady. One of the few exceptions is in black sheets, where occasional shading is noted.

Buffalo warehouses report June business has been disappointing to date, showing a decline both in comparison with the corresponding period of last year and the early part of May. Reinforcing bars are moving briskly but there is no great activity in other materials.

A gradual slowing down in warehouse trade is noted in the Chicago market, a movement proportional throughout the entire range of products. The volume for May was slightly under that of April, due largely to an unseasonal spring. The tendency is more noticeable in Chicago proper than in demand from manufacturing plants outside the city. Thus far June sales are running below those of June, 1926.

St. Louis warehousemen report business this month about up to expectations, but under last year. The principal loss in the yearly comparison is in building materials, weather having been distinctly adverse. Demand from municipalities, public utility companies and some lines of manufacturing has been good. Emergency buying of track, bridge and other supplies by the railroads in the flood districts continues active. The recent rise in the rivers again has halted operations at mills in Mississippi and Arkansas. The movement of reinforcing concrete bars constitutes about the only life in building materials.

Shading of bar prices reported in last week's issue continues to feature the Philadelphia warehouse market. On out of town business even lower than 2.55c, f.o.b. Philadelphia, has been done on domestic bars. Otherwise the market is unchanged.

Sales from Cleveland jobbers in the past week showed a slight increase, although buying continues spotty. Some competition in pipe prices from jobbers is reported in this and adjacent districts, but other materials are being maintained at the full quoted levels. Building materials demand is slow in improving from the lethargic condition in May.

One ton of malleable iron pipe fittings was the only shipment of iron or steel products made to the Falkland Islands in 1926 by the United States.

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	2.60c to 3.31c
Buffalo	2.75c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Ft. Worth	3.50c
Los Angeles	3.30c
New York	3.24c
Philadelphia	2.65c to 3.00c
Pittsburgh	2.85c to 2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.00c
St. Louis	3.15c
St. Paul	2.80c to 3.20c
Tulsa	3.80c to 4.06c

IRON BARS

Baltimore	2.60c to 3.31c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
Ft. Worth	3.50c
New York	3.24c
Philadelphia	2.65c to 3.00c
St. Louis	3.15c
Tulsa	3.80c to 4.06c

REINFORCING BARS

Baltimore	2.70c to 3.31c
Boston	3.265 to 3.50c
Buffalo	2.75c
Cincinnati	3.00c
Cleveland	2.50c to 2.70c
Detroit	3.15c
Ft. Worth	3.50c
*Los Angeles	3.05c
**Los Angeles	3.30c
New York	3.10c to 3.15c
Philadelphia	2.50c to 3.00c
Pittsburgh	2.50c to 2.75c
*San Francisco	2.85c
**San Francisco	3.10c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.50c to 2.60c

*Carload. **Less carload.

STRUCTURAL SHAPES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.25c
Ft. Worth	4.00c
Los Angeles	3.20c
New York	3.34c
Philadelphia	2.60c to 3.00c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.80c to 4.16c

PLATES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Ft. Worth	4.50c
Los Angeles	3.20c
New York (sheared and universal	3.34c
New York (floor)	5.25c
Philadelphia	2.60c to 3.00c
Phila., 3/16-in.	2.80c to 3.20c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.80c to 4.16c

No. 10 BLUE ANNEALED SHEETS

Baltimore	3.15c to 3.66c
Boston 3/16-inch	3.915c
Buffalo	3.80c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	4.00c
New York	3.89c
Portland	4.00c
Philadelphia	3.30c
Pittsburgh	3.30c
San Francisco	4.00c
Seattle	4.00c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.05c to 4.25c

No. 24 BLACK SHEETS

Baltimore	3.60c to 4.00c
Boston	4.95c
Buffalo	4.30c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.75c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles	5.00c
New York	4.20c
Philadelphia	4.35c
Pittsburgh	3.75c
Portland	4.75c
San Francisco	4.80c
Seattle	4.75c
St. Louis	4.45c
St. Paul	3.95c
Tulsa	4.75c

No. 24 GALVANIZED SHEETS

Baltimore	4.30c to 4.60c
Boston	5.65c
Buffalo	5.15c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.50c
Detroit	5.05c
Ft. Worth	5.75c
Los Angeles	5.75c
New York	4.95c
Philadelphia	5.20c
Pittsburgh	4.60c
Portland	5.50c
San Francisco	5.35c
Seattle	5.50c
St. Louis	5.25c
St. Paul	4.80c
Tulsa	5.55c

BANDS

Baltimore	3.20c to 4.06c
Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Ft. Worth	4.40c
Los Angeles	4.05c
New York	3.99c
Philadelphia	3.40c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Baltimore	4.16c
Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cincinnati	4.40c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	3.65c
Pittsburgh	4.25c to 4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds, hexagons	Flats, squares
Baltimore	3.50-4.00c	4.00-4.50c
Boston	4.05c	4.55c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500-lb. lots	6.00c
Buffalo	5.85c
Chicago*	6.10c
Cincinnati	7.15c
Cleveland*	5.95c
Detroit*	6.05c
New York	5.75c
Philadelphia	5.50c

*Net base, straightening, cutting, boxing one ton or more.

SWEDISH IRON AND STEEL

New York duty paid

Hollow drill steel	14.00c
Iron bars, rounds	6.25c

Flats and Squares

Baltimore, New York, Phila.	6.60c

Coast Buying Slackens

First Half Exceeds Previous Year but Second Quarter Below First Three Months

SAN FRANCISCO, June 11.—(*By Air Mail*)—Demand for iron and steel products of the Pacific Coast has not been heavy and few large awards were made. Despite the fact that many projects are being figured and much new work is on the boards, lettings have fallen off during the past few weeks. Prices are holding firm at the prevailing levels. Awards for first half in bars, plates, shapes and cast iron pipe, are considerably in excess of bookings for first half of 1926, but bookings during the second quarter were not as heavy as in the first quarter.

Pig Iron and Coke

Little of importance occurred in pig iron and coke this week, sales and inquiries being confirmed to unimportant lots for prompt shipment. Prices on pig iron remain the same as quoted last week.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	25.00
*Dutch	24.50

*C.i.f. duty paid.

Bars, Plates and Shapes

Demand for reinforcing bars has fallen off and for the first time this year no awards of over 100 tons were reported. A few smaller lots were let but the number of these projects have fallen off recently. Awards this year to date aggregate 23,801 tons as compared with 15,046 tons for the corresponding period in 1926. Pending business calls for over 10,000 tons. Included among the new inquiries of the week is 2500 tons for the Coolidge dam at San Carlos, Ariz., bids on which will be opened July 19. Trading in merchant bar steel is spotty and few inquiries of importance are up. Prices on out-of-stock material in the San Francisco district remains firm at 2.85c for lots of 200 tons or more and 3.10c for lots of less than 200 tons.

Awards of plate material this week totaled over 700 tons, bringing the aggregate for the year to 46,871 tons, compared with 44,915 tons for the same period last year. Among the awards of the week was 537 tons of 30-inch pipe and 191 tons of 18-inch pipe for Spokane, Wash., booked by the Steel Tank & Pipe Co. and the Beall Tank & Pipe Co., respectively. Bids were opened this week on a 500 ton pipe line for the Nevada irrigation district, on which the Steel Tank & Pipe Co. was low bidder. Pending business calls for over 5800 tons. Prices appear to be firm at 2.30c c.i.f. as a minimum on spot orders.

More structural awards went through this week than last week, the total exceeding 1500 tons, bringing the aggregate for the year to 76,884 tons, compared with 65,205 tons for the corresponding period in 1926. Among the larger lots were 800 tons for the Kress building, Portland, Oreg., awarded to Poole & McGonigle. Considerable new work is being figured but contracts are slow. Pending business exceeds 10,000 tons. The Kansas City Structural Steel Co. was low bidder on 1000 tons for the Lees Ferry bridge in Arizona. New inquiries include 800 tons of sheet piling for a dam at Lovelock, Nev., and 200 tons for an apartment house in San Francisco. Prices are firm at 2.35c c. i. f.

Other Finished Material

Sheets are not in active demand and most sales and inquiries involve relatively small lots. The Kittle Mfg. Co. has been awarded automobile license plates for Texas involving 450 tons, but this company has not yet placed the order for black sheets. Bids were opened last week for license plates for Oregon, calling for 400 tons, but no award has yet been made.

Demand for cast iron pipe has fallen off somewhat during the past week or two, awards totaling 951 tons bringing the aggregate for the year to 46,869 tons, compared with 33,869 tons for the same period last year. The largest award of the week called for 431 tons for Seattle, improvement of Harvard street, booked by J. L. Smith. Pending business calls for over 4800 tons, new inquiries developing during the week calling for 880 tons for San Diego and 144 tons for Silverton, Oreg. The Shell Oil Co. has an inquiry out for 130 miles of 10-inch pipe for a line from Coalinga to Taft but it is thought the project will not go through. Demand for standard pipe is considered only fair, few large sales or inquiries being noted.

Seattle sold 350 tons of scrap rails to Neides & Marcus at $12.12 a net ton. No inquiries of importance are up for figures on track material or fastenings.

Northwest Sales Fair

SEATTLE, June 9.—May building totals in the Pacific Northwest were spotty, Portland showing a record-breaking figure of nearly $5,000,000, while other centers were less than expected. Residence construction is prominent, in Seattle alone since Jan. 1, 1467 home permits having been issued at a valuation of $5,104,350.

Two large repair jobs, due to a collision between the French steamship ARKANSAS and the American steamship SUREMICO, will require considerable steel. The ARKANSAS job has been awarded to Todd Dry Docks, Inc., Seattle, at about $100,000 and bids for the SUREMICO are under consideration.

Pig Iron and Coke

Foundry activity is not marked although some new work from the pulp industry has been placed. Lumber and logging concerns are buying sparingly. Foundries are well stocked. Small tonnages of Columbia iron are being bought as required for quick delivery but there is practically no interest in foreign iron.

Bars, Plates and Shapes

Local steel mills are busy, manufacturing and jobbing inquiry being improved. Pacific Coast Steel Co. is running its Seattle plant at full capacity with three open-hearth furnaces. Better specifications are coming in and while no large awards have recently been placed, the aggregate business is larger. Prices on reinforcing materials are still demoralized, averaging probably no higher than 2.00c. Merchant bars are reported firm at 2.35c.

Plates are unchanged at 2.30c minimum. An award of 600 tons for a pipe line at Spokane was divided between the Steel Pipe & Tank Co. and the Beall Pipe & Tank Co., Portland. Fifteen hundred tons for a pipe line at Astoria, Oreg., has not been awarded. The Hydraulic Supply Mfg. Co., Seattle, has the contract for constructing five steel tanks, involving 65 tons, for the Northwest Portland Cement Co.'s new plant at Grotto, Wash. The Victoria Petroleum Co. has completed two 2000-barrel gasoline tanks at Victoria, B. C., involving less than 100 tons.

Structurals hold firm at 2.35c. The only award of the week involved 140 tons for the new state school for the blind at Vancouver, Wash., C. F. Martin getting the general contract. June 15 county commissioners at Willapa, Wash., will open bids for a steel span to cross the Willapa river.

Pipe Awards Are Made

Awards this week included 200 tons of cast iron pipe for an improvement at Redmond, Wash., to the McWane Pipe Co. through the Seattle Plumbing & Supply Co. The general contract for the Harvard avenue pipe job, Seattle, went to J. L. Smith, but award of 450 tons of cast iron pipe has not been made. Crane Co. was the lowest bidder at $9166 for furnishing Portland 3000 feet of welded steel pipe and accessories. Beverly Park, near Everett, is planning 2½ miles of new water mains for which an issue of $60,000 is being planned by the Beverly Park Water Co.

Iron and Steel Engineers Open Meeting

Pittsburgh, June 14.—That electrical safety facilities and devices, thoroughly organized safety measures, etc., reduce hazards in steel mills, mines, central stations and elsewhere, making them safer than ever before in history, was conclusively brought out at the safety symposium conducted at yesterday afternoon's session of the Association of Iron and Steel Electrical Engineers' twenty-third annual convention being held here this week. Technical sessions are being held at the Pittsburgh Athletic association annex. Approximately 200 exhibitors occupy two floors of Syria Mosque, showing every kind of electrical equipment made.

A. N. Cartwright, general superintendent power division, West Penn Power Co., Pittsburgh, in discussing safety progress of central stations pointed out the relation between safety to workmen and customers and safety to apparatus and service. Thomas E. Hughes, general foreman, Carnegie Steel Co., Duquesne, Pa., said that safety devices are useless without insistence upon obedience to orders. Descipline approaching the military standard alone will reduce accidents. George E. Gramm, electrical engineer, H. C. Frick Coke Co., Scottdale, Pa., discussed accident prevention in the coal and coke industry.

This morning's session was devoted to a symposium on antifriction bearings, following which Walter A. Winne, industrial engineering department, General Electric Co., Schenectady, N. Y., delivered an address on "The Application of Synchronous Motors in Steel Mills."

Visit Blast Furnaces

The Tennessee Products Corp. was host to 46 members of the iron and steel industry at Nashville, Tenn., June 9-10, in a trip to the Wrigley and J. J. Gray Jr. blast furnace plants. Special cars left from Chicago, where some members of the party were attending the American Foundrymen's association convention, and from Pittsburgh. The party was met by Rogers Caldwell, J. J. Gray Jr. and others, upon its arrival at Nashville and entertained at breakfast.

The party was then taken by bus to Rockdale, stopping at Columbia for luncheon. The plant at Rockdale, formerly owned by J. J. Gray Jr., produces ferrophosphorus and has a modern furnace equipped for efficiency and quality production. After witnessing all operations, the visitors watched a cast of ferropnosphorus made. The party then returned to Nashville where it was a guest of Frederick Leake, secretary and director of sales of the Tennessee Products Corp., at a dinner at the Belle Meade country club.

Saturday morning the party was taken to Lyle, Tenn., where the Wrigley plant is located. This charcoal furnace can be traced back to the eighties. Co-ordinated with the furnace is a wood distillation plant, carbonizing 200 cords of wood a day, furnishing fuel to the furnace and producing a large quantity of by-products used in various manufacturing industries. The furnace is producing a high grade of iron due to the slow process of reducing rich brown ores with an abundance of fuel. The trip ended with a banquet at the Andrew Jackson hotel.

Develop New Plate Uses in New England

Special uses for steel plates in New England are being developed to offset part of the loss resulting from the disappearance of shipyard demand. Cast iron base plates in building construction are giving way to steel plates, usually 6 or 8 inches thick. Tanks subjected to high pressures in the process of gasoline refining are made of plates. Development of waterpower calls for riveted steel plate penstocks.

In city water systems more riveted lines are being used. Probably the largest new outlet is afforded by electric welding, as heavy engine beds, generator frames, machine tool standards and bed plates formerly made of cast iron or steel are now produced by welding plates.

The sole shipyard now operating in New England has a steelworks connection. Sales of plates in New England in 1920 totaled 60,000 tons, according to the IRON TRADE REVIEW survey. It is believed this figure also describes 1926 business and that demand can be maintained on this plane.

Start Ore Probe July 1

Washington, June 14.—Preliminary plans are being made by the iron and steel division, tariff commission, in connection with the manganese ore investigation which has been ordered by the commission. It is not expected that any actual field work will be commenced until after July 1, when the new congressional appropriation is available.

Williams & Co. Inc. Opens New Warehouse

Williams & Co. Inc., Pittsburgh, iron and steel warehouse interest, has opened an office and warehouse in Cleveland, at 1846 East Twenty-third street. The territory of the Cleveland office, formerly handled direct from the main office at Pittsburgh is in charge of R. C. Waldie, district manager. Assisting him are E. R. Patton, sales engineer; P. W. Gilbert, chief clerk, and E. W. Gallagher, in welding products sales.

The Cleveland warehouse, which started operations May 16, handles stocks of monel metal in rods, hot rolled and cold drawn; sheets, hot and cold rolled; bolts, nuts and rivets; monel metal shot; boiler tubes; welding rods; bronze; ferrochrome; nickel ingots and nickel shot. Two daily deliveries to all points in the Cleveland district are being made.

H. E. Williams is president of Williams & Co. Inc., E. C. Edmundson, general manager, and Charles Johnston, treasurer. R. B. Nation is sales manager for monel metal and nickel at Pittsburgh.

Pig Iron Demand Is Quiet

(*Concluded from Page* 1549)

The only inquiry of size is for 5000 to 8000 tons, from the Standard Sanitary Mfg. Co. for third quarter delivery to its Louisville, Ky., works. A tentative inquiry from a local steelmaker for 2500 tons of basic is reported.

Birmingham, Ala., June 14.—Hand-to-mouth buying continues in the pig iron market. The Sloss-Sheffield Steel & Iron Co. shipped more iron than it made in the first five months, and this still is its situation. Quotations are firm at $18, base, Birmingham. No verification is to be had of a sale of a round tonnage of basic iron at a concession in this district. Nine blast furnaces are on foundry iron, ten on basic and one on special iron.

Philadelphia, June 14.—A sale of 5000 tons of pig iron from the Mystic furance to a Delaware river pipemaker is a feature of the market. One or two other sales of round tonnages of pipe iron also are noted. Otherwise current demand involves small and moderate tonnages of foundry iron, some for third quarter, but most of it for prompt delivery. Foundry iron price is unchanged at $21, base, eastern Pennsylvania furnace. Several small sales of low phosphorus iron aggregate 500 to 1000 tons. Prices are unchanged. Basic is featureless. An interesting development is purchase of Lake Superior charcoal iron by several foundries which previously had abandoned this grade in their mixtures. These sales were made at $24, base, furnace, plus $8.19 freight to Philadelphia.

Sandusky Bay Bridge Contract Let

Work will be started before July 1 on the Sandusky bay bridge, a 9500-foot causeway across a bay about six miles west of Sandusky, O. G. S. Beckwith Co., Cleveland, builder of the bridge, awarded contracts recently for the work. Great Lakes Dredge & Dock Co., Cleveland, will handle the dredging and filling and Homberg & Wager Engineering & Construction Co., Sandusky, the road paving. A. Bentley & Sons Co., Toledo, O., received the contract for the substructure and concrete work and Mt. Vernon Bridge Co., Mt. Vernon, O., the superstructure. The bridge involves a 60-foot vertical by 65-foot horizontal lift span as well as nineteen 100-foot spans. Materials involved include 116 tons of reinforcing material for substructure and concrete girder spans; 40 tons for pier encasement and fastenings; 1415 tons of structural steel for lift spans, trussed span over railroad track, etc.; 100 tons of structural steel for metal towers, anchor bolts, etc.; 75 tons of steel for hand rails for roadway along steel and concrete spans; 14 tons for main shafts, bearings, etc., 4½ tons of operating machinery, motors, etc., and 7000 pounds of wire rope and sockets.

Fabricators at Seattle Have Organized

To promote the interests of the industry of manufacturing, selling and erecting iron and steel for buildings and other purposes, the Northwest Structural Steel Board of Trade, Inc., has been formed by Seattle steel fabricating plants. The corporation has no capital stock. It will be the northwest chapter of the American Institute of Steel Construction. The incorporators are the Wallace Bridge & Structural Steel Co., Pacific Car & Foundry Co., Hofius Steel & Equipment Co., Isaacson Iron Works and Bacon & Mathieson Forge Co., all of Seattle. The officers are: President, Lacy Hofius; and secretary, Cecil H. Bacon. For the present the organization will maintain no central office. Its territory embraces all the states of the Pacific Northwest but at present there are no members outside of Washington.

Meet on Kalamein Doors

Washington, June 14.—A conference is to be held here June 15 of a committee in connection with the kalamein door simplification program, according to the national committee on metals utilization. The committee will consider the results of a survey it made. A. C. Goddard, of Howell-Field & Goddard Co., Long Island City, N. Y., is chairman of the committee.

Philadelphia Shape Board Issues Standards

Philadelphia, June 14.—Structural Steel Board of Trade of Philadelphia has issued a document to architects, engineers, builders, contractors, fabricators and others concerned in designing, estimating and contracting with respect to structural steel in Philadelphia and vicinity, as authorized by its conference June 9. Methods in which drawings for buildings for buildings and similar structures shall be prepared are stated in the recommendations. Drawings are to be accompanied by adequate specifications, showing material and labor of all classifications required, and conditions under which estimates should be submitted also are to be stipulated.

All structural steel drawings furnished for estimating purposes are to show a complete design, covering all structural steel included in the specific project, with sufficient detail to permit preparation of an accurate estimate.

New Buffington Harbor Is Opened

Chicago, June 14.—Vice President Charles G. Dawes, E. J. Buffington, president of the Illinois Steel Co., and T. W. Robinson, vice president in charge of operations of the Illinois Steel Co., were among the speakers at the ceremonies attending the opening of the new Buffington harbor of the Universal Portland Cement Co, June 9. The harbor, one of the largest on the Great Lakes, is six miles west of Gary, Ind., and cost upward of $2,000,000. The concrete dock is more than 1800 feet long and 600 feet wide. The storage yard covers 30 acres, and was created with sand dredged from the harbor and has a capacity of 1,000,000 tons of limestone or coal. The movable unloading bridge is 633 feet long. A belt conveyor, nearly a mile long, conveys material from the unloading bridge to the point. This is operated by electricity. Raw material for the production of cement will be received and cement shipped out.

Snap-on Wrench Co. Milwaukee, has increased its capitalization from $100,000 to $200,000, to increase production.

German Sheet Piling For 3 Important Jobs

New York, June 14.—Three important orders for sheet steel piling have been booked by Sheet Piling, Inc., 17 John street, New York. One involves 1575 tons for the twin cofferdams at New Jersey pier of new Hudson river bridge; another 875 tons for a large pipe job at Savannah, Ga., the piling to form the permanent dock wall, and the third about 150 tons for a pier for the Texas Co. in Brooklyn. The material for the cofferdams for the Hudson river bridge is to be unusually long, ranging up to 85-feet. In the Hudson river job parallel double walls will be driven in the deep water with cross walls connecting the parallel walls every 10-feet 6-inches. The sheet piling in these orders will be imported from Germany.

Immigrant Steelworkers 2007 in Ten Months

Washington, June 14.—In April 250 immigrant iron and steel workers entered the United States while six departed, according to the bureau of immigration. From July 1, 1926, to April 30, 1927, 2007 iron and steel workers were allowed to come into the United States and 148 left it. During April 54 metal workers, other than iron and steel, came into the country and 13 departed, and during the July-April period 442 entered and 46 left.

Finds Rates Too High

Washington, June 14.—B. F. Stillwell, an examiner of the interstate commerce commission, has prepared a proposed report finding that the rates on iron and steel articles, in carloads, from Pittsburgh and other points in western Pennsylvania to Barberton, O., and from Barberton to Munhall and Rankin, Pa., are unreasonable to the extent that they exceed the aggregate of intermediate rates contemporaneously in effect. Reparation is awarded in this case of the Babcock & Wilcox Co. against the Pennsylvania railroad.

Steel Club Will Golf

Philadelphia, June 14.—The Steel Club of Philadelphia will hold its annual golf tournament at the Aronomink Golf club, Drexel Hill, Friday. About 140, including district sales agents and representatives of leading consuming companies, will participate.

Foundrymen, in Successful 31st Meeting, Launch Fight for Principle

DIFFERENCES of opinion regarding the quality of pig iron and strenuous objections to a proposed specification for steel castings enlivened the technical program of the American Foundrymen's association presented last week at its thirty-first annual convention at the Edgewater Beach hotel, Chicago. Although the meeting was the first in a number of years to be held without the usual large exposition of foundry equipment and supplies, the attendance exceeded expectations, rising to about 1200. The interest shown in the discussion of foundry problems is indicated by the fact that at a number of the sessions more than 300 foundrymen were in attendance.

Technical sessions were held Tuesday, Wednesday and Thursday, the opening and closing days, Monday and Friday, being reserved for plant inspection. One of the innovations of this meeting were breakfast gatherings which proved popular as they afforded an opportunity for foundrymen to meet and discuss problems informally. The entertainment provided by the Chicago foundrymen was exceptionally well received. It included a dinner party at the Rainbow Gardens and an entertainment on the lake shore.

The two dominating sessions were those in which the qualities of pig iron and the report of the committee on steel castings were discussed. The attempt of the subcommittee of the American Society for Testing Materials to recommend specifications excluding converter and crucible steel provoked general indignation, even from those who would benefit from such a change in the specifications. As indicated in the more detailed account of this session which follows, the foundrymen's fight will be carried to the annual meeting of the American Society for Testing Materials which opens at French Lick Springs, Ind., June 21.

Protests Setting Up Chemical Limitations

CONSIDERABLE interest developed at the session on steel founding Wednesday afternoon at which R. A. Bull, Electric Steel Founders' Research group, presided. J. M. Sampson, General Electric Co., Schenectady, N. Y., presented an abstract of a paper, "A New Type of Mold Drying Oven." The paper was prepared in conjunction with G. H. Wright. The high degree of humidity in the oven during the early stages of drying, due to the introduction of steam, and the principle of keeping the air in the oven in circulation are the features of this oven. E. H. Ballard, General Electric Co., Lynn, Mass., stated that the molds baked in this oven had a better appearance than those he has seen baked by other means, and that the face of the molds are free from surface checks. Mr. Sampson stated that the length of time required to dry the molds is not increased with the new type oven.

"Characteristics of Some Steel Molding and Core Sand Materials," by E. R. Young, Detroit Steel Casting Co., Detroit, was the second paper on the program. The author showed the characteristics of a number of materials used in preparing steel and core sands and stated that what is needed to improve the present materials is a material which will retain its bond at high temperatures, or which will cause the sand mixture to glaze.

The report of the A. F. A. committee on steel castings was read in abstract by Chairman A. H. Jameson, Deemer Steel Castings Co., New Castle, Del. Mr. Jameson reported that in regard to high temperature carbon steel valves, flanges and fittings, the materials committee of the A. S. T. M. had voted to permit the use of the open hearth and the electric furnace, thus excluding the converter and the crucible, and to impose chemical limits in addition to the present physical requirements. The specification changes have been approved by the subcommittee and the general committee, adopted as tentative by letter ballot and will be submitted to a vote of the American Society for Testing Materials this month.

Would Set a Precedent

Mr. Jameson briefly outlined the work that has been done by the A. F. A. members of the materials committee to prevent the action which has been taken. He stated that while the chemical limits were such that they could be met easily, a great principle is at stake, and the adoption of these specifications by the A. S. T. M. would be an opening wedge which might result later in the limits being shortened sufficiently to work a great hardship upon the steel foundrymen. He also stated that the foundry industry does not want limits placed upon the chemical or physical properties of the product which may prevent the foundry from improving its practice and producing a better casting for the customer.

A resolution was passed unanimously protesting the discrimination against certain processes and the imposing of chemical limits other than those prescribing elements that are known as deleterious.

H. F. Moore, University of Illinois, Urbana, Ill., delivered an illustrated lecture on "Fatigue Tests of Cast Steel." From a series of tests performed, he concluded that with proper care in manufacture and heat treating, steel castings can be made which would resist fatigue stresses exceedingly satisfactorily.

The report of the A. F. A. committee on heat treatment of ferrous metals was read by Chairman A. H. Lorenz, Bucyrus Co., Milwaukee. The report outlined the work that has been done by the proper committee of the A. S. T. M. in developing a set of definations covering annealing, heat treatment, normalizing, etc. Discussion brought out the fact that a specific name should be found for the annealing operation followed in the steel foundry to distinguish it from annealing as applied to other products.

Major Bull presented the report of the A. F. A. representative on the committee to investigate the effect of phosphorus and sulphur in steel. An investigation is being organized to make tests on samples of steel

having various percentages of phosphorus. These samples are to be poured in a plant to be determined later and will be tested in laboratories maintained by the government. Mr. Bull states that the committee estimated the cost of the investigation would be $1500 and that $750 had been donated by the Steel Founders' Society of America and $125 by the Electric Steel Founders' Research group. It is proposed to raise the remainder from steel foundries not members of the two organizations mentioned.

Disagree on Casting Qualities of Pig Iron

A QUESTION tossed about between foundrymen and pig iron makers for years was brought out for full and free discussion at the conference on the qualities of pig iron for casting purposes held Tuesday afternoon. Briefly stated, the question is whether pig iron is as good as it used to be and if not, why not? R. H. Sweetser, American Rolling Mill Co., Columbus, who presided at a previous conference on the same general subject before the American Institute of Mining and Metallurgical Engineers during the past winter, and who acted as chairman of this session, stated that blast furnaces now are using about ¾-pound of coke per pound of iron as contrasted with 2 to 3 pounds of coke some years ago, and undoubtedly scrap is being remelted in the blast furnace to improve conditions.

Dr. Richard Moldenke, Watchung, N. J., who presented the opening statement for the foundrymen gave a history of the agitation for some standard method of evaluating pig iron quality. In his brief paper, he asked for something more definite than the chemical analyses now followed, since these do not show wherein certain irons produce inferior castings. He points to the decline in iron quality during the past few years and ascribes this condition to the increased use of scrap in the blast furnace.

C. C. Kawin, Chicago, discussing Dr. Moldenke's paper questioned whether the pig iron today is in any way inferior to that obtainable a few years ago. R. F. Harrington, Hunt-Spiller Corp., Boston, affirmed that various characteristics are found in different lots of iron that are not traceable to chemical content alone. He stated that lack of uniformity is evidenced by much greater shrinkage in some grades not found in others that are similar.

D. L. Ward, By-Products Coke Corp., Chicago, speaking for the furnace interests denied any retrogression in pig iron quality. He stated that hard driving in furnace operation does not injure pig iron quality. As showing that less chance exists for oxidized iron today than in years past, he showed that merchant furnaces are working with 83 per cent increased production, but with 15 per cent decrease in the cubic feet of air per square foot of hearth area and a total decrease of 44 per cent in the volume of air per unit of iron tapped, comparing practice today with that in 1910.

David McLain, McLain's System, Inc., Milwaukee, said that in his opinion further analyses giving data on metalloids other than carbon, silicon, phosphorus, manganese and sulphur are needed. He has found the use of steel scrap beneficial in the cupola and believes its use in the blast furnace is satisfactory. Further, he holds that iron scrap in the furnace is not harmful if injurious elements are not present in the scrap.

Representatives of various furnace interests insisted that pig iron today is as good, if not better than that made years ago. They pointed to the present day ability to make appropriate coal mixtures, to regulate oven temperatures and other factors tending to produce a uniform quality of coke impossible of attainment in the past. George A. T. Long, Pickands, Brown & Co., Chicago, stated that pig iron is better today, but that foundry melting conditions lack uniformity particularly as regards volume and pressure of air delivered through cupola tuyeres. H. B. Swan, Cadillac Motor Car Co., Detroit, questioned whether anyone could define what constitutes good pig iron. He doubts if pig iron obtainable 25 years ago would make as satisfactory cylinders as that used today. Walter Wood, R. D. Wood & Co., Philadelphia, stated that something akin to personality would be found in iron that could not be determined by analysis.

Dr. C. H. Herty, bureau of mines, Pittsburgh, speaking for his organization and for the bureau of standards which also operates under the department of commerce, offered the cooperation of these government agencies in solving the moot questions between the foundry and furnace interests. A resolution, offered by R. S. MacPherran and unanimously adopted by vote of some 200 interested individuals present, provided for a joint advisory board to work with government agencies in this undertaking. This board will consist of representatives of the American Foundrymen's association, the American Pig Iron association, the American Institute of Mining and Metallurgical Engineers and the American Society for Testing Materials.

Urges Buying of Core Oil by Specifications

APPROXIMATELY 200 attended the general foundry practice session, Tuesday morning, which was presided over by J. W. Bolton, Lunkenheimer Co., Cincinnati. V. A. Crosby, the Studebaker Corp., South Bend, Ind., presented a paper on "Core Oil Specifications" in which he outlined a set of specifications which govern the purchase of core oils by the Studebaker Corp.

H. L. Campbell, University of Michigan, Ann Arbor, Mich., took exception to the proposal of Mr. Crosby to govern core oil purchases by chemical and physical properties. He mentioned a series of tests which were made on the chemical and physical properties at the university and stated the results of these failed to show any connection with the strength of the core. He recommended using bond strength as the measure of core oil quality. In reply Mr. Crosby stated that a set of specifications such as he is using assures the purchase of oils capable of meeting conditions previously determined.

"Test Bars to Establish the Fluidity Qualities of Cast Iron," the exchange paper of the Association Technique de Fonderie de France, written by C. Curry, Ardennes, France, was read by James T. MacKenzie, American Cast Iron Pipe Co., Birmingham, Ala. In discussing this paper, Mr. MacKenzie stated that Mr. Curry had presented information of considerable value, but that information on tem-

perature would have increased the usefulness of the material presented.

The third paper covered the subject of foundry blackings and was written by D. G. Anderson and A. N. Ogden, Western Electric Co., Chicago. The authors presented a method of determining the usefulness of foundry blackings by electrical resistance. A special pneumatic agitator for mixing blacking also was described. R. F. Harrington, Hunt-Spiller Mfg. Corp., Boston, pointed out that many of the defects in castings credited to the molder are due to blacking improperly prepared.

The last paper at the session, "Analysis of 400 Tons of Defective Castings," by J. M. Haley, Crompton & Knowles Loom Works, Worcester, Mass., was read in abstract by R. E. Kennedy. Defects, indicated by a study of the castings, were classified and methods were presented to eliminate these defects in the future. Eugene Smith, Crane Co., Chicago, stated that about 90 per cent of defects are caused by poor equipment and supplies provided by the foundrymen.

Metallurgy Is Discussed

Keen interest was exhibited at the session of cast iron metallurgy which took place Wednesday afternoon with R. F. Harrington, Hunt-Spiller Mfg. Co., Boston, as chairman. The first paper to be presented was that on the "Growth of Cast Iron," by Dr. J. H. Andrews, Glasgow, Scotland. In the absence of Dr. Andrews excerpts from the paper were read by H. L. Bornstein, Deere Co., Moline, Ill. This paper gave an excellent summary of the various investigations that have been carried on during the past few years. From these works and his own, the author concludes that the underlying causes for growth are graphitization of combined carbon, percolation of air through graphite flakes, oxidation of ferrite, and previous treatment.

"Fatigue Tests of Cast Iron," by H. F. Moore and S. W. Lyon, University of Illinois, Urbana, Ill., was the second paper presented, and brought out some interesting data on this phase of cast iron metallurgy. With complete reversed bending, cast iron showed a strength of one-third its tensile strength compared to steel which shows one-half its tensile strength. In tests where the stress increased from zero to a maximum, without complete reversal the cast iron showed results 42 per cent higher than with complete reversal of stress.

J. W. Bolton presented his paper on "Some Graphite Formations in Gray Cast Iron." Mr. Bolton's paper is a continuation of the investigations he has made during the past 7 years and published previously. He brought out one conception of microscopic investigation that generally has been overlooked. This is the three-dimension form of graphite particles. This factor is accountable for the various appearances of graphite under the microscope, that is a long flake, a round particle or a point, and is due to the section through which the particle was cut.

The effect of alloy additions to cast iron were presented in the paper by R. S. Poister, Electro Metallurgical Sales Co., New York. The author gave results obtained by himself and others on the effect of nickel and chromium additions to cast iron and the general opinion was that a beneficial effect was had provided the melting methods were good; otherwise, the effect is indifferent.

Records Iron Temperatures

Interest in one of the three final closing technical sessions centered in a discussion of a paper presented by H. W. Dietert, United States Radiator Corp., Detroit and entitled "Correction of Cupola Operation by Means of Cupola Temperature Recorder." Reading of the paper was amplified by the presentation of a number of slides showing applications of the apparatus. With slight variation in the method of mounting, the apparatus may be utilized in connection either with a cupola operated intermittently or continuously. As was explained in a paper presented by the same author at the Detroit convention in 1926 the instrument does not indicate the actual temperature of the iron in the spout. The end of the thermocouple is suspended a few inches above the stream and indicates the temperature at that point.

The annual exchange paper by Jacques Varlet, Sclession, Belgium, entitled "Cast Chaplet and Tinned and Untinned Core Irons," was read by R. B. Kennedy. Other papers included one by S. C. Schaller, University of Washington, Seattle, Wash., entitled "A Study of Cupola Lining Refractories" and a report of the joint commission on pattern equipment by Chairman D. M. Avey, *The Foundry*, Cleveland.

Bonding Foundry Sand Proves Economical

REPORT of four general committees, reading of two formal papers and lively discussion by an audience which taxed the capacity of the meeting room, Wednesday morning, indicated the interest which molding sand has taken. Report of the general committee was presented by Chairman B. D. Fuller, who also is chairman of the general committee on sand research. In the absence of A. A. Grubb, Ohio Brass Co., Mansfield, O., chairman of the subcommittee on sand control and classification methods, Mr. Fuller read the report of that committee. The report was amplified by R. E. Kennedy, who explained the graphic table appearing in the printed report.

In presenting the report of the subcommittee on tests, Chairman H. Ries, Cornell university, Ithaca, N. Y., stated that the farther his committee has gone into the subject, the wider it has found the field. He has found it necessary to appoint several subcommittees to study specific minor features. R. F. Harrington, Hunt-Spiller Mfg. Corp., Boston, chairman of the subcommittee on sand conservation and reclamation, outlined briefly several methods of reclamation in practical use and stated his committee now is experimenting with a viscosity test for clay.

One of the papers presented at the meeting, "Routine Sand Control Methods in the Pipe Foundry," was prepared by M. Kuniansky, Lynchburg, Va. The other, "Effects of Moisture Absorption on the Properties of Dry Sand Cores," was presented by Prof. H. L. Campbell, University of Michigan, Ann Arbor, Mich.

Application of clay as a bonding agent for old sand in malleable foundry practice engaged the attention of a gathering of malleable foundry men under the chairmanship of L. C. Wilson, Federal Malleable Co., Milwaukee. Discussion revolved principally on points brought out in a paper, "Synthetic Molding Sands in the Malleable Foundry," presented by F. C. Scheiber, General Electric Co., Erie, Pa. Conditions which led up to the adoption of synthetic sand, early experiments, present method of preparation and some of the savings effected and other advantages of the change were described.

The author explained that in the

foundry with which he was connected from 20 to 25 tons of sand are treated daily, about 350 tons of sand are in use on the floor and the saving effected by the present method of rejuvenating the sand amounts to approximately $1000 per month. One of the important items credited to the use of synthetic sand was the reduction of scrap from 18 to 7 per cent and a scrap loss in the machine shop from 5 to less than 1 per cent. Some of this reduction may be due to the fact that a tightening up all along the line of inspection and supervision naturally followed the introduction of new methods and new materials.

Old core sand enters extensively into the mixture which is dried and then prepared in a mixer of the muller type. Addition of clay in the dried state is not favored. The clay is mixed with water and added to the sand in liquid form. The mixture is mulled for approximately 3 minutes. then removed and riddled.

Compares Nonferrous Quality

Difficulties met with in commercial brass foundry practice, and practical methods of solving them, were discussed at the round table conference held Wednesday afternoon, under the chairmanship of N. K. B. Patch, Lumen Bearing Co., Buffalo. One question involved the comparison of melting losses on yellow brass in electric and in crucible furnaces. While the consensus of opinion was that operating efficiency largely governs success with either equipment, losses as low as one and one-half per cent were cited for electric furnaces. One speaker described a 30-day test on 60-40 yellow brass, all scrap charges and billet pouring, which gave a net loss of 0.68 per cent.

A comparison of quality of castings obtained from electric and from crucible furnaces developed the conclusion that uniformity is the deciding factor and depends largely on operation, whether borings, clippings or scrap metal is used.

In discussing the gasification of nonferrous castings, it was stated that this condition is due largely to pourings at temperatures too high.

Reduces Molding Losses

The outline of a system adopted by the Ohio Brass Co., Mansfield, O., by which molding losses are reduced through a "baseball plan" of organization in that company's plant was given at the Thursday morning nonferrous founding session by R. A. Greene, assistant superintendent of the company. The plan essentially provides for a scheme of friendly rivalry among the molders themselves and functions for results, it was declared.

Mr. Greene pointed out that the company's molders are paid for the number of molds they make, with pay deductions enforced in case of dirty and shifted castings. Instructors have charge of groups of about 15 molders each.

C. J. Zaiser, American Metal Products Co., Milwaukee, presented the paper on "The Improvement of Aluminum Bronze as an Engineering Material", originally prepared by Dr. R. C. Reader, of Birmingham, England, for the Aluminum Bronze Manufacturers institute.

Problems in the gating of nonferrous castings were taken up and discussed from drawings submitted by R. L. Binney, Toledo, O., D. E. Broggi, Neptune Meter Co., Long Island City, N. Y.; C. V. Nass, Ohio Brass Co., Mansfield, O.; W. F. Herst, general superintendent of the Wolverine Brass Works, Grand Rapids, Mich.; E. F. Hess, Ohio Injector Co., Mansfield, O., and others.

Under the chairmanship of L. C. Wilson, Federal Malleable Co., Milwaukee, the session relating to malleable foundry problems was held Thursday morning. The first paper presented was that by Prof. R. S. McCaffery, University of Wisconsin, on "The Cause of Variations in Pig Iron." Prof. McCaffery attributed the variations to the changes in the amounts of the compounds, such as iron silicide, manganese sulphide, etc., the temperature being the governing factor in determining the amounts of these compounds in the resulting metal.

Tentative specifications for the sizes of refractory brick blocks, etc., for malleable foundries were presented by James R. Allan, International Harvester Co., Chicago, and he stated that these had been adopted for the present. Some minor changes had been made since the Detroit convention, but in the main the specifications are the same.

Pickling Problems Discussed

Fred L. Wolf, Ohio Brass Co., Mansfield, O., presented some data on pickling solutions for malleable and said that a bath containing 5 to 6 per cent sulphuric acid worked excellently. The pickling operation required about 35 minutes. Ventilation for removal of fumes was found to increase the amount of work the picklers could perform. He said pickling cost about $1.60 per 1000 pounds, but that for his company's work sandblasting was a little cheaper and that it was turning to that method. He also stated in case of a hard iron silicate skin, that 2 per cent hydrofluoric acid added to the regular bath removed this skin.

Apprenticeship Shortage Becoming Serious

OPENING the apprenticeship training meeting, Tuesday morning, H. A. Frommelt directed attention to the fact that a recent survey conducted by the Engineering foundation indicated that at least 1,000,000 apprentices actually were needed at present to meet the needs of the basic industries of the United States. Out of this number approximately 10 per cent or 100,000 were needed in the foundry industry alone, instead of approximately 1000, the number of apprentices actually learning the molding trade. Owing to several conditions, the shortage, except in isolated instances has not made itself felt acutely. However, the situation, slowly but surely is becoming serious and he urged immediate action.

F. A. Lorenz, works manager, American Steel Foundries, East Chicago, Ind., commented on the change which gradually has taken place in the foundry industry and which has converted it from a somewhat indiscriminate business, with no fixed standards or methods into a highly specialized industry in which mechanical equipment, scientific methods and metallurgy play a more important part that individual skill.

He doubted the efficacy of the method adopted during the war years when nearly all attention was devoted toward training men for foremanship. Many of these men might qualify as excellent mechanics but they had no qualification as teachers.

Speaking further, Mr. Lorenz suggested the remedy is to provide technically trained young men as teachers and a selected list of boys preferably not over 16 as apprentices. He deplored the prevailing American attitude of parents toward the prospect of their boys becoming ordinary workmen and claimed an organized movement should be launched to sell the idea of industry as just as honorable and

worth while as any other walk of life.

Outlining the points to be considered at the session on cost accounting, Tuesday afternoon, A. E. Hageboeck, Frank Foundries Corp., Moline, Ill., stated that the movement was primarily and largely of an educational character. Probably the majority of foundrymen realize that some form of cost system is essential in their business, but for various reasons it had not been adopted. Approximately half of the steel foundries are operating under a system in whole or in part similar to that observed by the Steel Founders Association of America. The other half have adopted, with local variations, the method sponsored by the American Foundrymens' association. The same applies to the makers of malleable castings who follow the lead set by the Malleable Iron Research institute. He regretted that up to the present the founders of nonferrous castings have taken no concerted action on the subject.

J. L. Carter, Barlow Foundry, Newark, N. J., presented a report on the manner in which a group of foundrymen was organized in his district to study cost accounting and pointed to many general and specific instances of its success. Two cases were cited in which a yearly saving of $5000 had been effected. In a third instance intensive study of conditions induced by a cost analysis had led to the elimination of 12 men with a consequent saving of about $12,000.

Foundry Instructors Organize

Definite steps toward the formation of a permanent organization were taken by a representative group of men engaged in teaching foundry practice at the various engineering schools, at a meeting Monday evening. The meeting was held under the chairmanship of B. W. Benedict, University of Illinois and included representatives from the University of Illinois. Carnegie Institute of Technology, Case School of Applied Science, University of Nebraska, Lincoln, Neb., University of Michigan, University of Washington, Cornell university, Armour institute and Lane and Harrison Technical schools, Chicago.

The meeting was the third of the kind held in recent years and the discussion principally was confined to the report of three committees appointed to consider respectively: A study of the curricula, laboratory equipment and co-operation between the schools and industrial establishments. A motion was adopted to enlist the aid of the American Foundrymens association in collecting and tabulating data in connection with the present equipment of the various schools and publishing this material with additions from time to time, so that uniformity might be established.

Foundrymen Bring Successful Year to Close

IN HIS annual report on Tuseday morning, President Utley traced the growth of the association since its organization in 1896, both from the standpoint of membership and committee activities. He then asked the chairmen of the various committees to present short reports on the work accomplished by their organizations during the year.

In closing his report, Mr. Utley praised Executive Secretary Hoyt and Technical Secretary Kennedy for their splendid work during the year. He then announced the appointment of several committees.

Executive Secretary Hoyt reported on the officers nominated at the recent meeting of the nominating committee in Buffalo. Since no further nominations had been made, those nominated were declared elected. The new officers are as follows: S. Wells Utley, Detroit Steel Castings Co., Detroit, president; S. T. Johnston, S. Obermayer Co., Chicago vice president; H. Y. Carson, E. H. Ballard, C. A. Goldsmith, A. E. Hageboeck, W. J. Nugent, directors.

Selection of Philadelphia as the meeting place for the 1928 convention and exhibition was announced in a report of the committee on exhibitions. The convention will be held May 12-18 in the Commercial Museum. The meeting was then adjourned until four o'clock Wednesday afternoon.

At the final business meeting on Wednesday, the resolution adopted at the pig iron conference the day before authorizing a committee to act with the department of commerce in studying pig iron qualities as relating to castings, was approved and passed to the board of directors for action. B. F. Fuller, Cleveland, read the report of the apprenticeship molding contest committee, and C. E. Hoyt read the report of W. F. Grill, Western Foundry Co., Chicago, chairman of the judges committee on the pattern contest. Appreciation of the association for the activities of those who contributed to the success of the convention was expressed in a report of chairman Alfred E. Howell, Somerville Stove Works, Somerville, N. J., chairman of the resolutions committee.

Medal Is Awarded

About 500 members and guests attended the annual banquet at the Edgewater Beach hotel, Wednesday evening. S. W. Utley as toastmaster read a telegram from Paul Ropsey, on behalf of the European foundrymen's associations, expressing their feeling of good will and wishing prosperity to the American Foundrymen's association. He then called upon C. S. Vessy, chairman of the mileage contest committee, for the results of the contest. Mr. Vessy stated that the New England Foundrymen's association with an attendance of 12 won the award, a silver mounted gavel, with a total of 12,228 miles traveled.

Mr. Utley then spoke on the history of the foundry industry and said that its beginning was estimated to be about 7000 years ago. He stated that the present age was called the materialistic age, and that he believed that more lasting progress now was being made than ever before because all mankind benefited rather than the individual. In this connection he drew the picture of the influence of the foundry industry and presaged in coming years, a far greater improvement in methods and application.

Past President A. B. Root Jr., chairman of the board of awards, presented the Joseph S. Seaman gold medal to Major R. A. Bull, Electric Steel Founders Research group, Chicago, in recognition for his contributions to the association and to the foundry industry. The principal address of the evening was delivered by Dr. Preston Bradley, pastor, Peoples church, Chicago, who took for his subject, "Facing the Future."

Officers of the Montreal chapter of the American Society for Steel Treating have been elected as follows: Honorary chairman, Dr. Alfred Stansfield, department of metallurgy, McGill, university, chairman, F. C. Pascoe, metallurgist; vice chairman, Fred H. Williams; secretary, Duncan C. MacInnes; and treasurer, Gordon Sproule.

June Auto Schedules Are Lighter

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Gossip of Motor World at Detroit

Detroit, June 14.—JUNE is proving the low month of the quarter in automobile production. This may also hold good for receipts of finished steel in this district. Save for Dodge Bros., who are gathering momentum on their new six-cylinder car, and Hudson-Essex, which has resumed after being down for plant rearrangement, practically all makers have curtailed their schedules. It looks now as though the output of the first half would fall 12 to 15 per cent short of the first half of 1926.

The big spring and early summer buying movement in automobiles is now past, and the industry is looking to the third quarter and new models. At this time the outlook is that July schedules will be heavier than those for June. Buick, for example, will soon have its 1928 line in production and its July schedule will triple June. The reception accorded the new models brought out in July will largely determine the August and September runs.

* * *

MAJOR interest, of course, centers on the new Ford car. Since the official lily was laid on Model T two weeks ago only gossip and speculation have seeped out of Highland Park and Fordson. The betting odds still favor a light four. There is a little ground for believing the name will be Linford—a combination of Lincoln (not Lindbergh) and Ford. Both a gear shift and planetary transmission have been perfected at the Dearborn laboratories, rumor has it, but a choice has not been made. If a three-forward speed planetary transmission is adopted, it will be a vast improvement over the present one. Nothing is closer to Henry Ford's heart than his transmission system. He is not unmindful of the fact that he has made more cars and money with it than Chevrolet and Overland put together.

* * *

ESTIMATES of the time it will take Henry Ford to get into production with his new job have been revised. Officially, production of Model T is at an end, but it is said some assembly is still in process. The great bulk of the Ford force has been laid off, but the staff employed in retooling and rearrangement is working overtime. Recent orders for machine tools in New England have specified immediate delivery. It is now thought that the first new Fords assembled in the regular way will not be out before July 15 or possibly Aug. 1. No rate worthy of being termed production will be attained before late September, it is generally believed. Up to this time the Ford Motor Co. has not bought steel for the new model on a tonnage basis.

To stock up Ford dealers will provide good schedules for a number of weeks. Since a large part of the Ford output is sold in rural districts, the late fall may not be a propitious time for sales. There is less optimism today concerning the Ford Motor Co.'s comeback than there was thirty days ago. With all its popular favor Chevrolet Motor Co. is now passing 4600 as a daily mark, and its peak day's run is about 5100. If the Ford Motor Co. caught up with Chevrolet, and this conceivably would take months, it would engage only one half of its facilities.

* * *

TO KEEP its dealers in a contented frame of mind pending shipments of its new car the Ford Motor Co. is understood to be planning a repair parts campaign. Owners of Model T will be told they possess the cheapest transportation in the world and to keep it. One view is that some Ford owners who normally would trade in their cars this fall will run them a little longer. Some that might have been junked will be kept on the road longer. For these reasons demand for repair parts may actually increase for two years, but then drop off sharply as retirement gets in its deadly work.

* * *

FEW not familiar with the motor industry appreciate the difficulties of getting out a new model. Each major part is the product of a separate department, which frequently has its own staff of engineers. To co-ordinate these departments speedily is the real task. The maker of a four-cylinder car who is now bringing out a six has been attempting to devise a standard transmission for both. The difficulties have been such that in one week recently not one transmission was produced. Considering that the demand for Model T has been tapering for months, it is a cause for wonderment that Henry Ford has not long since decided on what he will throw into the breach.

* * *

DETROIT has uttered many harsh words about Henry Ford but is now finding that it needs him worse than he needs the city. Due largely to the idleness at Highland Park and Fordson, general business at Detroit is on an unsatisfactory basis. The fact is that Flint is the automobile center of the world. Flint, with a population not a twentieth of Detroit, is turning out as many cars—over 6000 daily—in its Chevrolet and Buick plants as all the makers in Detroit put together. Flint banks directly with New York, thereby causing some financial anguish in Detroit. Ford is Detroit and General Motors is Flint, and the latter has had the popular call.

* * *

THE Ford Motor Co. has asked its sources of sheet supply to consider a new method of billing, to supplant the tonnage basis. Now, a 5 per cent allowance for gage variation is made for No. 18 gage and heavier and 2½ per cent for No. 20 gage and lighter. Because of manufacturing difficulties it is necessary to have a slight overage in both width and length. Makers have not guaranteed the count. The Ford company would ascertain the theoretical number of sheets in each shipment, calculate the theoretical weight and if there is any overage exceeding the tolerances this would be absorbed by the mills.

Urges Water Safeguards

Chicago, June 14.—Industries were cautioned to use care concerning the purity of their water supplies not only for plants but also for employes because of recent court decisions holding employers liable for the recovery of damages for faulty drinking water, said M. F. Tiernan, president, Wallace & Tiernan, Newark, N. J., at the closing session here June 10 of the American Water Works association convention.

Grand Metal Products Co., New York, has increased capital from $30,000 to $40,000.

British Output Near Records

Pig Iron Production in May Mounts to 700,000 Tons—Steel Increases to 870,000 Tons, Within 80,000 Tons of Peak—New Demand Light—English Firm Takes 10,000-Ton Buenos Ayres Rail Order

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, June 14.—(*By Radio*)—May was another imposing month in British iron and steel production, according to statistics just issued. Pig iron output climbed up a notch from recent record performances; the month's total amounting to approximately 700,000 tons. This compares with 680,000 tons in April and 671,000 tons in March. Steel production moved up to 870,000 tons in May, which was an increase of 20,000 tons over April, but 80,000 tons less than the record total of 949,600 tons in March.

New demand for pig iron has been slumping, and at the close of May five less blast furnace stacks were in operation than at the end of April. One Barrow furnace was damped during the past week. Continental pig iron competition is decreasing according to indications.

Bolckow, Vaughan & Co. have taken an order for 10,000 tons of rails for Buenos Ayres. An order for 1525 tons of tram rails has been placed by the city of Brisbane, Australia. Engineering and shipbuilding demands have improved slightly. Tin plate mills are closing; the industry as a whole is working at about 65 per cent.

Berlin reports active domestic markets and good foreign orders for ship plate. The continental steel entente has decided to maintain third quarter production on a basis of 29,287,000 tons annually. Germany has obtained a 50 per cent reduction in its penalties for excess domestic tonnage. The European wire rod syndicate is reported definitely organized, and has fixed the price at £5 12s 6d ($27.25). Negotiations are progressing for an international export syndicate.

British Prices Decline as Continent Competes

Office of IRON TRADE REVIEW.
Prince's Chambers, Corporation St.

Sterling $4.86

BIRMINGHAM, Eng., June 3.—(*European Staff Service*)—After a temporary spurt British pig iron seems to be on the down grade as to production and shipment. Notices have been posted at the Tees Bridge iron works owned by Pease & Partners intimating that the two blast furnaces are to be damped down at the end of the week. This will reduce the number of furnaces operating on the northeast coast to 42, compared with 38 which were in blast prior to the general strike.

The Middlesbrough market is described as profoundly gloomy, the response to the latest price cuts being negligible. It is obvious that these concessions came after consumers had booked good contracts with continental pig iron producers.

An important feature of the Staffordshire finished iron trade is the reduction of £1 ($4.86) per ton in the price of best iron. This material was increased 10s ($2.43) last December to £14 10s ($70.47) when the mills were restarted. The new basis is £13 10s ($65.61), a figure which is lower than at any time since the war except for a brief period following the slump in 1922. The

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, June 13	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON	£ s d		£ s d		£ s d		£ s d	
Foundry No. 3, Silicon 2.50-3.00	$17.01	3 10 0*	$15.55	3 4 0	$15.55	3 4 0	$17.62	3 12 6
Basic	23.33	4 16 0	16.52	3 8 0	16.52	3 8 0	17.86	3 13 6
Basic-bessemer	19.44	4 0 0†	15.07	3 2 0	15.07	3 2 0	17.25	3 11 0
Hematite, Phosphorus 0.02-0.05	19.20	3 19 0	23.91	610*	.....	.....	20.41	4 4 0
SEMIFINISHED STEEL								
Billets	$32.81	6 15 0	$21.87	4 10 0	$21.87	4 10 0	$21.14	4 7 0
Wire rods	46.17	9 10 0	27.34	5 12 6	27.34	5 12 6	27.34	5 12 6
FINISHED STEEL								
Standard rails	$36.67	7 15 0	$30.38	6 5 0	$30.38	6 5 0	$30.38	6 5 0
Merchant bars	1.68c	7 15 0	1.06c	4 16 0	1.06c	4 16 0	.....	4 17 0
Structural shapes	1.44c	6 12 6	1.05c	4 15 0	1.05c	4 15 0	1.03c	4 14 0
Plates, ship, bridge and tank	1.68c	7 15 0	1.35c	6 2 6	1.35c	6 2 6	1.32c	6 0 0
Sheets, black, 24 gage	2.39c	11 0 0	2.17c	9 17 6	2.17c	9 17 6	2.86c	13 0 0
Sheets, galvanized, 24 gage, corrugated	3.17c	14 12 6	3.22c	14 12 6	4.23c	3,250*	3.74c	17 0 0
Bands and strips	2.28c	10 10 0	1.32c	6 0 0	1.32c	6 0 0	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.57c	7 2 6	1.57c	7 2 6	1.60c	7 5 0
Galvanized wire, base	3.04c	14 0 0	2.04c	9 5 0	2.04c	9 5 0	2.09c	9 10 0
Wire nails, base	2.50c	11 10 0	1.73c	7 17 6	1.73c	7 17 6	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.62	0 19 0	.....	.....	.....	.....	$ 6.80	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$17.01	3 10 0	$18.03	460(2)	$17.79	640	$19.78	86
Basic pig iron	23.33	4 16 0	19.40	495(1)	17.79	640	20.24	88
Furnace coke	5.35	1 2 0	7.06	180	6.12	220	4.95	21.50
Billets	32.81	6 15 0	20.78	530	21.43	770	25.88	112.50
Standard rails	1.74c	8 0 0	1.51c	840	1.30c	1,600	1.46c	140
Merchant bars	1.84c	8 10 0	1.10c	610	1.11c	850	1.40c	134
Shapes	1.65c	7 12 6	1.04c	575	1.11c	850	1.37c	131
Plates, ship, bridge and tank	1.82c	8 7 6	1.33c	740	1.40c	1,075	1.55c	149
Sheets, black, 24 gage	2.50c	11 10 0	2.52c	1,400	2.21c	1,700	2.29c	220
Sheets, galvanized 24 gage, corrugated	3.20c	14 15 0	3.60c	2,000	4.23c	3,250	3.65c	350
Plain wire	2.12c	9 15 0	2.52c	1,400	2.15c	1,650	2.03c	195
Bands and Strips	2.28c	10 10 0	1.35c	745	1.33c	1,020	1.61c	154

***Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longway. British export furnace coke £1 1s 6d ($5.22) f. o. b. Ferromanganese £19 12s 0d ($95.26) delivered Atlantic seaboard, duty paid. German ferromanganese £15 0s 0d ($72.90) f. o. b.**

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel. French, Belgian, Luxemburg, and German are for basic-bessemer steel.

bar iron trade is severely depressed and it is hoped this reduction will stimulate business. It follows reductions in other brands of bar iron, Scottish producers having taken 10s ($2.43) off the price for crown quality iron bars, making the new basis £10 15s ($52.24). In common iron the price is unchanged at £10 5s ($49.81) but continental competition is severe in this branch.

The Midland iron and steel wages board announces a reduction of 2½ per cent in ironworkers' wages under the sliding scale to take effect from June 6 to Aug. 6. This follows the bi-monthly ascertainment of net selling prices of finished material which reveals a decline of about 6s ($1.45) a ton. Wages are still 47½ per cent above the 13s 6d ($3.27) basis for puddling.

Continental competition is active in various semifinished and finished products and quantities of cold rolled strip are passing through Birmingham merchants' hands. The bulk of this comes from Germany but some is from Belgium. Belgian No. 3 iron costs about £5 17s 6d ($28.54) delivered in the Black Country. Billets can be had at £5 10s ($26.73) and sheet bars at £5 12s 6d ($26.71).

The galvanized sheet trade is receiving moderate inquiry for thick gages. The price for 24 gage is £14 12s 6d ($71.07) to £14 15s ($71.68) and makers are well situated.

In tin plate the stoppage of so many mills is expected to result in some stabilization of prices. The question of fixing minimum selling prices and eliminating unnecessary competition was recently discussed at a meeting of tin plate makers outside Baldwins and the Corporation. The principle was agreed upon and a committee appointed to go into the details of the scheme. Tin plate prices fluctuate between 19s ($4.62) and 19s 6d ($4.74) and some sales have been made even lower. Welsh tin plate bars are offered at £6 5s ($30.37) but most makers are using foreign material at £1 ($4.86) less. Heavy steel scrap is a weak market at £3 2s 6d ($15.18) delivered South Wales. Steelworks are well stocked and are buying as little scrap as possible.

French Steel Revival Is Delayed

Office of IRON TRADE REVIEW,
9 Rue de Londres

PARIS, June 3.—(*European Staff Service*)—Although there is a little more activity on the French iron and steel market, there are no definite signs of a lasting revival. Buyers show a lack of interest, although the possibility of selling syndicates being formed should incite them to cover themselves as the formation of these syndicates would result in a rise of prices, since a selling organization including most producers would dispel competition. There is no scheme to syndicate finished products, but if prices of semifinished steel and wire products were stabilized at a higher level the prices of finished products made from these materials would necessarily harden, and the influence of the semifinished steel and wire rod syndicates should expand all over the market unless the demand was generally dull, as happens to be the case in the wire products department now. Although the price of wire rods is practically controlled, domestic prices of steel wire and wire nails are low as manufacturers are accepting even low offers to keep their works going.

Franc—3.92c

There is no change in the price of furnace coke, but a considerable tonnage of Belgian coke is entering France at a lower price than quoted by the German Kohlen Syndikat. The domestic pig iron market is dull and although prices fixed by the entente are quoted, discounts are offered and even in some cases a higher tonnage than invoiced is delivered; in fact, all means are employed to escape the rulings of the entente with regard to prices.

Basic bessemer billets are quoted at 500 to 510 francs per metric ton ($19.50 to $19.90). There is brisk demand for open-hearth steel, especially from automobile and forging industries. Italy is buying substantial tonnages of steel scrap in the form of billet heads which are sold at 370 to 380 francs ($14.40 to $14.85) at the mill. Demand for beams and structural shapes is small since construction work is slow. Beams are quoted at 550 to 570 francs ($21.50 to $22.25), merchant bars at 600 to 610 francs ($23.40 to $23.80). Basic bessemer wire rod is quoted at 750 francs ($29.25) at Thionville, wire nails being sold at 1100 francs ($43), which is inadequate when taking account of the cost of transformation.

Discussion of the new customs tariff has begun in the French parliament and a number of general clauses have been voted. However, when the actual increase of the new tariff came into discussion the socialist and communist opposition took exception to the rapidity with which the commission had examined the scheme and insisted on the discussion being adjourned until a more complete comparison between the new duties and the old ones could be effected, and the government has agreed to the adjournment.

German Domestic Market Steady

BERLIN, June 3.—(*European Staff Service*)—German iron and steel business continues satisfactory as far as the domestic market is concerned, but foreign sales are greatly restricted owing to low prices, especially those quoted by Belgian producers. It was rumored that German manufacturers intended to withdraw from the export markets for the last two weeks in May, but finally it was officially stated that these rumors were without foundation. Domestic business was stimulated by the fact that the Rhenanian-Westphalian coal mines were asking an increase of 7½ per cent on their quotation, but the government did not give its necessary consent to this advance. However, consumers apprehending this increase of coal prices, which probably would also have resulted in higher steel prices, bought substantial tonnages, and unfilled orders have considerably increased. Krupps report they have booked more orders than at any time since the stabilization of the currency.

Sales of semifinished steel continued satisfactory and structural shapes were sold at a better rate, resulting from the further development of building activity. Sales of merchant bars increased. One of the most active departments was ship plates. Ship plates also are sold in fair quantities abroad, so that unfilled orders are sufficient to keep the works busy for some months. The position in regard to thin sheets is not satisfactory, although it has improved. Negotiations concerning the formation of an association for thin sheets are progressing and already Hoesch, Wolff, Netter and Jacobi have entered into an agreement in this direction. Wire rod business progresses fairly satisfactorily and the activity of wire nail makers also has improved. Sales of galvanized wire and galvanized barbed wire have increased largely.

Works are not eager to book foreign orders at present prices and comparatively little material has been contracted for export. The only big order reported was for about 20,000 tons of rails for Yugo-Slavia, on reparations account. Exports of wire products fell from 53,850 tons in January to 39,000 tons in March, but of late more activity has been registered.

German output of pig iron in April showed a small decrease from 1,085,859 metric tons in March to 1,051,872 tons. For the first four months of this year 4,167,672 tons were produced, compared with only 2,705,707 tons in the corresponding period of last year. Domestic business in pig iron is fairly active and prices are unchanged. Foreign sales are suffering from uncertainty as to the possible formation of an international pig iron association.

Industrial Men in the Day's News

August Ziesing, Retired President, American Bridge Co.

CELEBRATING his golden anniversary in the metalworking industry, he retired from the bridge building profession which he joined as a draftsman in 1878.

HIS 22 *years as president of his company are a record of expansion, progression and accomplishment. Many honors and recognitions have been awarded him.*

UNUSUALLY vigorous for his age, he takes an active part in his recreations, golf, farming and breeding dairy cattle. He has an extensive circle of intimate friends.

ON APRIL 1, August Ziesing, president of the American Bridge Co., Pittsburgh, subsidiary of the United States Steel Corp., retired from active service. During the 50 years of his business career, the bridge and building industry has made unprecedented progress. The development has been so great in the design, fabrication, and erection of all classes of steel structures, that one may well marvel at their present mammoth proportions and wonder what their ultimate limitation will be.

Upon receiving the bachelor of science degree in civil engineering at the University of Illinois, Urbana, Ill., in 1878, Mr. Ziesing engaged as a draftsman with M. Lassig, a pioneer bridge builder. In 1880 Mr. Ziesing became bridge engineer for the Pennsylvania railroad west of Pittsburgh, with headquarters in that city.

In 1883 he returned to Chicago to become chief engineer and manager of the Lassig Bridge & Iron Works, remaining until 1897. In 1893 the railroads entering into Chicago began elevating their tracks within the city limits. Many of the street crossings required in connection with this work were fabricated by the Lassig shops.

In 1898 Mr. Ziesing established in Chicago an office as consulting engineer, devoting his attention principally to the designing of railroad structures. It was while thus engaged that he designed the Chicago & Alton railroad bridge across the Missouri river at Glasgow, Mo. One of his various commissions was that of consulting engineer for the Delaware & Lackawanna railroad. Many of the structures on this line were replaced upon his suggestion, based upon increased loadings which Mr. Ziesing foresaw the railroads would adopt, although at that time many engineers considered the adopted loadings in excess of anything which might become standard. The passing years have shown the correctness of Mr. Ziesing's vision.

Shortly after the formation of the American Bridge Co., upon the urgent recommendations of Mr. Ziesing's many friends in the engineering profession, he was appointed western manager for that company.

In 1905 he was elected president, and immediately directed his energies toward modernizing the then existing plants, accomplishing great reduction in fabricating costs and increased output per man employed. The construction of Ambridge plant, which was started before this time, was completed during his administration; and Gary plant, at Gary, Ind., was built under his supervision. His progressive policy dictated the reconstruction of the plants at Elmira, N. Y., and Trenton, N. J.

During his regime the American Bridge Co. has either fabricated or fabricated and erected many of the world's most notable steel structures. Among those fabricated only, a few of the most notable are the Woolworth building, the Equitable building, the Metropolitan Tower, and the American Telephone & Telegraph building, in New York; Chicago Union station, the Tribune Tower, the Stevens hotel, the Palmer house, the Pure Oil building, and the Bankers' building, in Chicago; and the Union Trust Co. building, in Cleveland. Included among the structures fabricated and erected are the Hell Gate bridge, the Williamsburg bridge, the greater portion of

the structural steel in the Philadelphia-Camden suspension bridge, and the recently completed bridge over Carquinez Straits, at Crockett, Calif.; the largest swing bridge in the world, crossing the Mississippi river at Fort Madison, Iowa, built for the Atchison, Topeka & Santa Fe railroad, and other Mississippi and Ohio river crossings.

During the World war, the American Bridge Co., under Mr. Ziesing's energetic guidance, furthered the cause of the Allies in building an ordnance plant at the Gary works for the production of field artillery. It also furnished and erected the fabricated steel in the United States naval ordnance plant at Washington, wherein the largest naval guns are produced; the Ford Eagle plant, at Detroit. At close of the war the company was engaged in the construction of the gigantic ordnance plant at Neville Island, Pa., for the United States government.

Approximately half of the structural material entering into the construction of the merchant marine, built by the Emergency Fleet Corp., was fabricated at the American Bridge Co. shops.

In recognition of his pre-eminence in the profession, the University of Illinois, in 1905, conferred the degree of civil engineer upon Mr. Ziesing. He was honored also by election to honorary membership in Tau Beta Pi, an honorary engineering fraternity.

Mr. Ziesing is a member of the American Society of Civil Engineers, Western Society of Civil Engineers, American Railway Engineering association; Engineers' Club of New York; Duquesne club, Pittsburgh; the Engineers' club, Union League club, and the University club of Chicago, and the Skokie Country club, Glencoe. These connections will enable him to keep in close touch with his personal and business friends.

Mr. Ziesing's father was a physician and surgeon in LaSalle county, Illinois, but many of his relatives were farmers and on their farms he spent much of his early life. The training thus obtained accounts for his devotion to the farm and that which pertains to it. His retirement from the activities of the American Bridge Co. will no doubt give him that leisure to devote to those interests which will be so happily spent in pursuits which he so much enjoys.

He is unusually active and vigorous for his age, and indulges frequently in golf and farming, his recreations. He is a breeder also of dairy cattle.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

GEORGE J. HAGAN is now with the Surface Combustion Co., in the Pittsburgh sales office. He has been in the furnace business in Pittsburgh for 26 years, having founded the George J. Hagan Co., furnace contractor and builder, the Hagan Corp., manufacturer of control equipment, and the Hagan Foundry Corp.

About two years ago Mr. Hagan sold his entire interest in these concerns and has been engaged in consulting work in the furnace and combustion field.

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L. C. Polk, Seattle, representing the American Cast Iron Pipe Co. in Seattle, has returned from a business trip to Honolulu.

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J. D. Young, formerly employment manager of the Wilson Foundry & Machine Co., Pontiac, Mich., has been named assistant general manager of the Dunham Co., Berea, O.

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R. P. Shimmin has been appointed assistant to the chairman and the president of the Link-Belt Co., Chicago, and will make his headquarters at 910 South Michigan avenue, Chicago.

Frank B. Caldwell has been appointed sales manager with headquarters at the Chicago plant office, and will have supervision over all sales activities in the western division.

* * *

W. D. Goldsmith, treasurer and general manager, C. A. Goldsmith Co.,

W. D. GOLDSMITH

Newark, N. J., has been elected a director of the American Foundrymen's association. He attended Princeton and Lehigh universities, and has been active in the work of a number of associations. For several years, he was vice president of the Newark Foundrymen's association, Newark, N. J., and vice president of the Metropolitan Brass Founder's association, New York. Mr. Goldsmith is vice president of the Port Newark National Bank, a member of the Essex club, the Newark Athletic club and the Rotary club of Newark.

* * *

W. A. Rose, of Duluth, assistant general manager of mines for Pickands, Mather & Co., Cleveland, has been promoted to assistant to Charles H. Minger in charge of the mining department of the company. Mr. Rose has been with Pickands, Mather & Co. 14 years.

* * *

J. L. Carter, Barlow Foundry Inc., Newark, N. J., has been elected president of the Newark Foundrymen's association. Other officers include William Goldsmith of C. A. Goldsmith, Newark, vice president; J. A. Williamson, Isabell-Porter Co., Newark, treasurer; and W. H. Mantz, Atlas Foundry Co., Irvington, N. J., secretary.

* * *

Edwin Bates, bureau of foreign and domestic commerce, Washington, has

just left for the Pacific coast in connection with a regional market survey. He recently completed a survey in New England.

* * *

R. S. Breyman, M. A. Germond, D. Graze, Deane S. Holt and J. C. Yetter have been added to the sales department of Harnischfeger Sales Corp., Milwaukee.

* * *

H. Y. Carson, research engineer, American Cast Iron Pipe Co., Birmingham, Ala., was elected a director of the American Foundrymen's association at its recent convention in Chicago. He was graduated from the University of Illinois, Champaign, Ill., with the class of 1911, and for

H. Y. CARSON

two years following that was branch manager and chief engineer, Carson-Payne Co., Danville, Ill., and Indianapolis. Following that, and until June, 1914, he was assistant professor and superintendent of construction in the office of the supervising architect, University of Illinois. He took post-graduate work at Harvard university, Cambridge, Mass., the summer of 1914, in the school of health officers. He served as sanitary engineer for the Central Foundry Co., New York, from September, 1914, until February, 1918. Mr. Carson is the Foundrymen's representative on the National Research council committee on corrosion and represents the association and American Society for Testing Materials on the committee on cast iron and corrosion.

* * *

T. A. Goodridge has been appointed manager of the agricultural division of the Crucible Steel Co. of America, New York, and will be located at the Chicago warehouse and office.

* * *

Tom Towne, eastern sales agent for the FitzSimons Co., Youngstown, O., has been appointed general manager of sales with headquarters at Youngstown.

* * *

C. K. Woodbridge, formerly vice president and general manager of the Electric Refrigeration Corp., New York, has been elected president, succeeding A. H. Goss, resigned. Mr. Goss becomes chairman of the board, succeeding H. A. Tremaine, who has been elected a member of the executive committee, replacing J. Robert Crouse, resigned.

* * *

Benjamin Soby, assistant to the manager of the sales promotion department, Westinghouse Electric International Co., New York, has been appointed manager of the advertising division, Pittsburgh district office, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. He has been with the company since 1918 and was director of publicity for seven years.

* * *

W. T. Shannon, district sales manager at Cincinnati for the American Sheet & Tin Plate Co. retired June 1 at the age of 70. He was associated with the company as sales manager since its formation. He was sales representative at Chattanooga, Tenn., for the Apollo Iron & Steel Co., before 1900. He was transferred to Cincinnati when that company became the American Sheet Steel Co. and was made district sales manager. He held that position after the formation of the American Sheet & Tin Plate Co.

L. K. Slaback has been appointed to succeed Mr. Shannon. Mr. Slaback became associated with the American Sheet Steel Co. company when its office was established at Cincinnati in 1900, and he continued his connection upon the formation of the Tin Plate company. He was appointed assistant district sales manager in 1922.

* * *

Charles R. Meissner, superintendent, Weirton Steel Co., Weirton, W. Va., is the newly-elected president of the Eastern States Blast Furnace and Coke Oven association, with which he has been connected actively since its organization in 1921. He was vice president of the association last year and secretary-treasurer the year previous. Mr. Meissner is a graduate of Cornell university, Ithaca, N. Y. of 1912, and has been associated with the Oliver Iron Mining Co., Eveleth, Minn., Inland Steel Co., Chicago, Wheeling Steel Corp., Wheeling, W. Va., and Koppers Co., Pittsburgh.

William A. Haven, elected secretary-treasurer of the association, is superintendent of blast furnaces of the Republic Iron & Steel Co., Youngstown, O. He was graduated from Pennsylvania State college in 1909, entering the employ of the Carnegie Steel Co., Farrell, Pa. works, soon afterward.

* * *

E. H. Ballard, general foundry and pattern superintendent, Lynn and Everett, Mass., plants of the General Electric Co., Schenectady, N. Y., was elected a director of the American Foundrymen's association at its recent convention in Chicago. He was born in Hartford, Conn., in 1883. He

E. H. BALLARD

worked for many years for the Thomson-Houston Electric Co., Lynn, Mass., later to become part of the General Electric Co., resigning in 1905 to accept a position with the Massachusetts Steel Castings Co., Everett, Mass., as superintendent. This company later was absorbed by the General Electric Co. Mr. Ballard is a member of the Foundrymen's committee on pattern equipment standardization.

* * *

George B. Cortelyou, president of the Consolidated Gas Co., New York, has been elected chairman of the joint committee of National Utility associations, representing the gas, electric and street railway industries of the United States.

Philip H. Gadsden, vice president of the United Gas Improvement Co., Philadelphia, was elected vice chairman of the joint commitee and chairman of the executive committee.

1926 Best Steel Output Year

Final Statistics for 1926 Show Ingots and Castings Gain 6.4 Per Cent—Finished Rolled Goods Increase 6.32 Per Cent—Some Products Decline

PRODUCTION OF STEEL INGOTS AND CASTINGS BY PROCESSES.

Years	Open-hearth			Bessemer	Crucible	Electric	Miscellaneous	Total Gross Tons.
	Basic	Acid	Total					
1912	19,641,502	4,139,231	20,780,733	10,327,901	121,517	18,309	2,853	31,251,303
1913	20,344,626	1,255,305	21,599,931	9,545,706	121,226	30,180	3,831	31,300,874
1914	16,271,129	903,555	17,174,684	6,220,846	89,869	24,009	3,622	23,513,030
1915	22,308,725	1,370,377	23,679,102	8,287,213	113,782	69,412	1,527	32,151,036
1916	29,616,658	1,798,769	31,415,427	11,059,039	129,692	168,918	604	42,773,680
1917	32,087,507	2,061,386	34,148,893	10,479,960	126,716	304,543	495	45,060,607
1918	32,476,571	1,982,820	34,459,391	9,376,236	115,112	511,364	329	44,462,432
1919	25,719,312	1,229,382	26,948,694	7,271,562	63,572	384,452	2,952	34,671,232
1920	31,375,723	1,296,172	32,671,895	8,883,087	72,265	502,152	3,535	42,132,934
1921	15,082,564	507,238	15,589,802	4,015,938	7,613	169,499	945	19,783,797
1922	28,387,171	921,812	29,308,983	5,919,298	28,606	346,039	.	35,602,926
1923	34,665,021	1,234,636	35,899,657	8,484,068	44,079	515,872	.	44,943,696
1924	30,719,523	857,827	31,577,350	5,899,590	22,473	432,526	.	37,931,939
1925	37,087,342	947,146	38,034,488	6,723,962	19,562	615,512	.	45,393,524
1926	39,653,315	1,024,783	40,678,098	6,948,449	15,493	651,723	.	48,293,763

PRODUCTION OF STEEL CASTINGS.

1912	443,998	426,850	870,848	68,750	20,550	4,162	2,311	966,621
1913	460,161	450,055	910,216	80,806	17,371	9,207	3,244	1,020,744
1914	334,144	270,173	604,317	65,882	11,186	8,551	3,310	693,246
1915	333,103	402,229	735,332	92,476	14,756	23,064	1,196	866,824
1916	605,512	570,937	1,176,449	142,791	9,351	42,870	302	1,371,763
1917	558,568	654,588	1,213,156	159,272	3,834	64,911	234	1,441,407
1918	505,880	634,950	1,140,830	160,844	1,330	108,296	110	1,411,410
1919	313,965	448,555	762,520	98,819	1,009	111,510	2,579	976,437
1920	449,330	537,070	986,400	104,980	1,729	155,196	3,237	1,251,542
1921	217,957	216,488	434,445	38,809	736	85,095	628	559,713
1922	425,981	404,767	830,748	47,733	1,045	154,982	.	1,034,508
1923	571,310	581,299	1,152,609	67,512	1,952	235,958	....	1,458,031
1924	456,518	402,901	859,419	53,437	1,377	206,549	.	1,120,782
1925	455,282	462,303	917,585	53,834	1,833	279,534	.	1,252,786
1926	480,627	491,498	972,125	56,947	2,041	326,445	.	1,357,558

PRODUCTION OF ALLOY STEEL INGOTS AND CASTINGS.

Years	Ingots	Castings	Total	Years	Ingots	Castings	Total.
1913	625,430	88,927	714,357	1920	1,591,939	68,353	1,660,292
1914	577,107	69,846	646,953	1921	769,293	40,255	809,548
1915	923,251	97,896	1,021,147	1922	1,614,392	59,104	1,673,496
1916	1,306,157	56,458	1,362,615	1923	2,014,269	92,220	2,106,489
1917	1,576,806	67,529	1,644,335	1924	1,940,461	85,948	2,026,409
1918	1,721,367	66,485	1,787,852	1925	2,320,390	112,583	2,432,973
1919	1,435,816	45,372	1,481,188	1926	2,317,313	146,101	2,463,414

PRODUCTION OF ALLOY STEEL INGOTS AND CASTINGS BY PROCESSES, GROSS TONS, 1926.

Processes	Ingots	Castings	Total
Open-hearth steel—basic	1,930,963	11,977	1,942,940
Open-hearth steel—acid	59,047	56,735	115,782
Bessemer steel	77,955	12,617	90,572
Crucible steel	6,540	769	7,309
Electric steel	242,808	64,003	306,811
Total Gross tons.	2,317,313	146,101	2,463,414

TOTAL PRODUCTION OF ALL KINDS OF FINISHED ROLLED IRON AND STEEL, 1890–1926.

Years	Iron and steel rails	Plates and sheets	Nail plate.	Wire rods	Structural shapes	All other finished rolled	Total Gross tons.
1890	1,885,307	809,981	251,828	457,099	. . .	2,618,660	6,022,875
1891	1,307,176	678,927	223,312	536,607	. . .	2,644,941	5,390,963
1892	1,551,844	751,460	201,242	627,829	453,957	2,579,482	6,165,814
1893	1,136,458	674,345	136,113	537,272	387,307	2,104,190	4,975,685
1894	1,021,772	682,900	108,262	673,402	360,305	1,795,570	4,642,211
1895	1,306,135	991,459	95,085	791,130	517,920	2,487,845	6,189,574
1896	1,122,010	965,776	72,137	623,986	495,571	2,236,361	5,515,841
1897	1,647,882	1,207,286	94,054	970,736	583,790	2,497,970	7,001,728
1898	1,981,241	1,448,301	70,188	1,071,683	702,197	3,239,760	8,513,370
1899	2,272,700	1,903,505	85,015	1,036,398	850,376	4,146,425	10,294,419
1900	2,385,682	1,794,528	70,245	846,291	815,161	3,575,536	9,487,443
1901	2,874,639	2,254,425	68,850	1,365,934	1,013,150	4,772,329	12,349,327
1902	2,947,933	2,665,409	72,936	1,574,293	1,300,326	5,383,219	13,944,116
1903	2,992,477	2,599,665	64,102	1,503,455	1,095,813	4,952,185	13,207,697
1904	2,284,711	2,421,398	61,601	1,699,028	949,146	4,597,497	12,013,381
1905	3,375,929	3,532,230	64,542	1,808,688	1,660,519	6,398,107	16,840,015
1906	3,977,887	4,182,156	54,211	1,871,614	2,118,772	7,383,828	19,588,468
1907	3,633,654	4,248,832	52,027	2,017,583	1,940,352	7,972,374	19,864,822
1908	1,921,015	2,649,693	45,747	1,816,949	1,083,181	4,311,608	11,828,193
1909	3,023,845	4,234,346	63,746	2,335,685	2,275,562	7,711,506	19,644,690
1910	3,636,031	4,955,484	45,294	2,241,830	2,266,890	8,475,750	21,621,279
1911	2,822,790	4,488,049	48,522	2,450,453	1,912,367	7,316,990	19,039,171
1912	3,327,915	5,875,060	45,331	2,653,553	2,846,487	9,908,475	24,656,841
1913	3,502,780	5,751,037	37,503	2,464,807	3,004,972	10,030,144	24,791,243
1914	1,945,095	4,719,246	38,573	2,431,714	2,031,124	7,204,444	18,370,196
1915	2,204,203	6,077,694	31,929	3,095,907	2,437,003	10,546,188	24,392,924
1916	2,854,518	7,453,980	30,088	3,518,746	3,029,964	15,493,093	32,380,389
1917	2,944,161	8,267,616	22,864	3,137,138	3,110,000	15,585,921	33,067,700
1918	2,540,892	8,799,135	18,310	2,562,390	2,849,969	14,385,058	31,155,754
1919	2,203,843	7,372,814	12,832	2,538,476	2,614,036	10,359,543	25,101,544
1920	2,604,116	9,337,680	20,577	3,136,907	3,306,748	13,941,835	32,347,863
1921	2,178,818	4,260,574	14,573	1,564,330	1,272,624	5,483,087	14,774,006
1922	2,171,776	7,968,397	21,969	2,654,741	2,718,768	10,916,353	26,452,004
1923	2,904,516	9,497,717	22,833	3,075,892	3,405,197	14,370,921	33,277,076
1924	2,433,332	8,087,883	22,175	2,522,545	3,283,708	11,736,792	28,086,435
1925	2,785,257	9,807,659	22,038	2,844,656	3,604,130	14,323,220	33,386,960
1926	3,217,649	10,529,056	17,337	2,722,032	3,911,663	15,098,155	35,495,892

PRODUCTION of steel ingots and castings in 1926 established another new record for the country with a total of 48,293,763 gross tons, according to official statistics compiled by the American Iron and Steel institute. This was a gain of 2,900,239 tons, or 6.4 per cent over the 45,393,524 tons of 1925, which also was a record. Iron and steel rolled into finished forms amounted to 35,495,892 tons and likewise set a new record.

Steel ingots totaled 46,936,205 tons, this being an increase of 2,795,467 tons, or 6.3 per cent, over the 44,140,738 tons of the year before. Production of steel castings in 1926 with 1,357,558 tons gained 104,772 tons, or 8.35 per cent, over the 1,252,786 tons of 1925. Ingots made a new high record by surpassing the 1925 tonnage, but castings were fifth highest, being exceeded by 1916, 1917, 1918 and 1923, the latter being the record with 1,458,031 tons. In 1926, ingots were made in 154 works, against 152 in 1925, and castings were made in 293 works, compared with 292 in the previous year.

Included in the 39,653,315 tons of basic open-hearth steel ingots and castings produced in 1926 were 2,815,980 tons of duplex ingots and castings made from metal partly purified in bessemer converters and finally purified in basic open-hearth furnaces, against 2,797,318 tons in 1925. Duplex steel made in 1924 was 2,131,856 tons and in 1923, 2,919,286 tons. Alloy steel made in 1926 was a record with 2,463,414 tons, as compared with 2,432,973 tons the year before. Of this amount, 2,317,313 tons was ingots and 146,101 tons was castings. Electric steel made up 306,811 tons of the total, as against 293,780 tons in 1925.

Finished rolled iron and steel in 1926 amounted to 35,495,892 tons, an increase of 2,108,932 tons, or 6.32 per cent, over the 33,386,960 tons of the preceding year. By surpassing 1925, a new record was established. During 1926, plants rolling finished forms of iron and steel totaled 371, as compared with 362 in 1925. Of the total finished rolled production last year, about 98.2 per cent was from steel, against about 97.8 per cent in 1925.

Increases for various products ranged up to 15.5 per cent for rails and 16.5 per cent for skelp. Plates and sheets increased 7.35 per cent and structural shapes, 8.55. On the other hand, concrete bars declined 0.45 per cent; merchant bars, 3.28 per cent; and wire rods, 4.3 per cent. Rails increased from 2,785,257 tons to 3,217,649 tons; plates and sheets from 9,807,659 tons to 10,529,056 tons; structural shapes from 3,604,130 tons to 3,911,663 tons; skelp from 3,229,768 tons to 3,764,550 tons; tin and terne plate from 3,713,459,757 pounds to 3,992,365,606 pounds; galvanized sheets from 2,717,332,128 pounds to 2,943,045,839 pounds. Wire rods decreased from 2,844,656 tons to 2,722,032 tons; merchant bars from 5,659,315 tons to 5,473,836 tons; concrete bars from 819,587 tons to 815,829 tons; cut and wire nails from 16,189,858 100-pound kegs to 15,531,301 kegs. Seamless tubes advanced from 568,190 tons to 775,329 tons. Steel strips and flats for cold rolling totaled 1,222,089 tons.

Finished Goods Again Record

PRODUCTION OF MERCHANT BARS, SHOWING IRON AND STEEL MERCHANT BARS SEPARATELY, GROSS TONS, 1905–1926.

Years	Iron.	Steel	Total	Years.	Iron.	Steel	Total.
1905	1,322,439	2,271,162	3,593,601	1916	993,948	5,236,354	6,230,302
1906	1,481,348	2,510,852	3,992,200	1917	983,926	5,226,031	6,209,957
1907	1,440,356	2,530,632	3,970,988	1918	846,898	5,395,561	6,242,749
1908	685,233	1,301,405	1,986,638	1919	446,549	3,945,075	4,391,624
1909	952,230	2,311,301	3,263,531	1920	663,032	5,467,208	6,130,240
1910	1,074,163	2,711,569	3,785,731	1921	198,324	1,367,430	1,565,754
1911	835,625	2,211,737	3,047,362	1922	317,665	3,660,993	3,978,658
1912	944,790	2,752,324	3,697,114	1923	404,730	5,148,066	5,552,796
1913	1,036,832	2,930,977	3,957,809	1924	258,737	4,022,184	4,280,921
1914	583,171	1,960,460	2,523,631	1925	290,488	5,368,827	5,659,315
1915	657,107	3,474,135	4,131,242	1926	252,437	5,221,399	5,473,836

PRODUCTION OF CONCRETE BARS, SHOWING IRON AND STEEL CONCRETE BARS SEPARATELY, GROSS TONS, 1909–1926.

Years	Iron	Steel	Total	Years.	Iron	Steel.	Total.
1909		159,352	159,352	1918	468	344,152	344,620
1910	4,645	236,464	241,109	1919	2,295	416,726	419,021
1911	2,388	256,353	258,741	1920	698	571,747	572,445
1912	2,500	271,832	274,332	1921	1,094	226,134	227,228
1913	113	319,557	319,670	1922	696	575,120	575,816
1914		288,471	288,471	1923	368	680,499	680,867
1915		353,408	353,408	1924	507	655,615	656,122
1916	2,683	458,717	461,400	1925	1,195	818,392	819,587
1917	1,497	469,687	471,184	1926	1,849	814,180	815,829

PRODUCTION OF HEAVY AND LIGHT STRUCTURAL SHAPES, GROSS TONS, 1915–1926.

Years.	Heavy shapes.	Light shapes.	Total.	Years.	Heavy shapes	Light shapes.	Total
1915	2,031,407	405,596	2,437,003	1921	1,082,727	189,897	1,272,624
1916	2,649,961	380,003	3,029,964	1922	2,337,026	381,742	2,718,768
1917	2,576,810	534,190	3,110,000	1923	2,917,446	487,751	3,405,197
1918	2,438,126	411,843	2,849,969	1924	2,805,084	478,624	3,283,709
1919	2,136,424	477,612	2,614,036	1925	3,049,817	554,313	3,604,130
1920	2,741,120	565,628	3,306,748	1926	3,330,572	581,091	3,911,663

PRODUCTION OF SKELP, SHOWING IRON AND STEEL SKELP SEPARATELY, GROSS TONS, 1905–1926.

Years	Iron	Steel	Total	Years	Iron	Steel.	Total
1905	452,797	983,198	1,435,995	1916	355,445	2,572,229	2,927,674
1906	391,517	1,137,068	1,528,585	1917	336,591	2,337,640	2,674,231
1907	444,536	1,358,091	1,802,627	1918	255,500	2,305,511	2,564,011
1908	297,049	853,534	1,150,583	1919	192,146	2,363,632	2,555,778
1909	370,151	1,663,230	2,033,381	1920	252,403	2,967,886	3,220,289
1910	350,578	1,477,616	1,828,194	1921	115,523	1,815,052	1,930,575
1911	332,397	1,658,276	1,980,673	1922	218,868	2,653,347	2,872,215
1912	327,012	2,119,804	2,446,816	1923	216,846	3,517,490	3,734,336
1913	312,748	2,180,918	2,501,964	1924	186,581	3,004,982	3,170,543
1914	264,340	1,718,091	1,982,431	1925	178,586	3,051,182	3,229,768
1915	282,198	2,037,256	2,299,454	1926	189,774	3,574,776	3,764,550

PRODUCTION OF SEAMLESS STEEL TUBES, GROSS TONS, 1917–1926.

Years.	Hot finished	Cold drawn	Total	Years	Hot finished	Cold drawn	Total.
1917	87,615	139,060	226,675	1922	120,652	137,183	257,835
1918	142,308	150,586	292,894	1923	202,069	201,114	403,783
1919	75,864	121,505	197,369	1924	131,758	129,399	261,157
1920	132,091	159,479	291,570	1925	403,965	164,225	*568,190
1921	59,663	58,221	117,884	1926	620,936	154,393	*775,329

PRODUCTION OF TINPLATES AND TERNE PLATES, 1893–1926.

Years	Tinplates	Terne plates.	Total pounds
1893	64,536,209	59,070,498	123,606,707
1894	102,223,407	84,120,002	186,343,409
1895	165,927,907	88,683,488	254,611,395
1896	270,151,785	89,058,013	359,209,798
1897 (first 6 months)	203,028,258	49,545,643	252,573,901
1897 (second 6 months)			322,205,619
1898 (calendar year)			732,289,600
1899			808,360,000
1900 (sea. year end. May 31)	707,718,239	141,285,783	*850,004,495
1901 (calendar year)			884,411,840
1902			806,400,000
1903			1,075,200,000
1904 (sea. year end. Dec. 31)	887,526,985	158,857,886	*1,032,940,706
1905 (calendar year)			1,105,440,000
1906	1,100,373,000	193,367,000	1,293,740,000
1907	996,650,000	156,447,000	1,153,097,000
1908	1,048,896,000	154,179,000	1,203,075,000
1909	1,179,858,000	190,930,000	1,370,788,000
1910	1,450,821,000	168,184,000	1,619,005,000
1911	1,597,629,000	158,441,000	1,756,070,000
1912	1,965,659,000	191,396,000	2,157,055,000
1913	1,708,186,000	136,944,000	1,845,130,000
1914	1,939,785,000	146,195,000	2,085,980,000
1915	2,201,825,054	163,470,646	2,365,295,700
1916	2,552,224,275	214,176,952	2,766,401,227
1917	3,233,314,911	153,891,653	3,387,206,564
1918	3,216,247,675	85,376,569	3,301,624,244
1919	2,407,156,757	171,859,924	2,579,016,681
1920	3,079,953,351	158,067,437	3,238,020,788
1921	1,675,320,852	103,853,961	1,779,174,813
1922	2,707,648,715	177,235,512	2,884,884,227
1923	3,166,263,546	†207,106,248	3,375,369,794
1924	2,975,231,674	†202,553,793	3,177,785,467
1925	3,458,574,585	†254,885,172	3,713,459,757
1926	3,750,481,879	†241,883,727	3,992,365,606

* Includes 1,000,473 pounds in 1900 and 6,355,853 pounds in 1904 of "other sheet iron and sheet steel, tin or terne plated." † Includes 152,457,892 pounds of long terne plates in 1923, 163,820,675 pounds in 1925, 107,986,974 pounds in 1924, and 106,784,730 pounds in 1923.

PRODUCTION OF CAST-IRON PIPE AND FITTINGS, NET TONS.

Years.	Gas and water.*	Soil and plumbers.	Total.	Years.	Gas and water.*	Soil and plumbers	Total.
1916	934,626	279,707	1,214,333	1922	926,577	356,872	1,283,449
1917	748,173	250,926	999,101	1923	1,134,059	432,828	1,566,887
1918	508,300	111,373	619,673	1924	1,365,272	476,078	1,841,350
1919	514,664	195,417	710,081	1925	†1,414,252	510,483	†1,924,735
1920	636,862	249,653	886,515	1926	1,534,278	469,228	2,003,506
1921	564,138	230,092	794,230				

* Includes culvert pipe. † Revised.

PRODUCTION OF IRON AND STEEL GALVANIZED SHEETS AND GALVANIZED FORMED PRODUCTS, 1916–1926.

Years.	Galvanized sheets.	Galvanized formed products *	Total. Pounds.
1916	1,346,924,950	130,302,195	1,477,227,145
1917	1,273,978,805	114,902,171	1,388,880,976
1918	1,159,778,807	121,110,267	1,280,889,074
1919	1,500,575,548	140,494,884	1,641,070,432
1920	1,871,360,951	143,894,730	2,015,255,681
1921	1,366,883,503	109,956,328	1,476,839,831
1922	2,109,991,396	165,713,067	2,275,704,463
1923	2,364,862,856	165,741,098	2,530,603,954
1924	2,228,960,835	155,901,514	2,384,862,349
1925	2,539,112,552	178,219,576	2,717,332,128
1926	2,788,473,075	154,572,764	2,943,045,839

PRODUCTION OF PLATES AND SHEETS BY KINDS, 1925–1926

Kinds	1925—Gross tons.			1926—Gross tons		
	Iron	Steel.	Total	Iron	Steel	Total
Universal plates*	3,001	1,193,020	1,196,021	5,543	1,402,004	1,407,547
Sheared plates—						
Rolled on single stands	342	1,930,004	1,930,346	211	2,193,071	2,193,282
Roughed and fin. on sep. stands		627,084	627,084		600,353	600,353
Black sheets rolled on sheet or jobbing mills	38,216	4,058,616	4,096,832	4,645	4,232,834	4,237,479
Black plates, including black plates for tinning and black plate specialties rolled on tin mills		1,957,376	1,957,376		2,090,395	2,090,395
Total	41,559	9,766,100	9,807,659	10,399	10,518,657	10,529,056

* Include flats and bars over 6 inches wide.

PRODUCTION OF WROUGHT PIPE AND SEAMLESS STEEL TUBES, INCLUDING BOILER TUBES, GROSS TONS, IN 1926.

Kinds of pipe or tubes	Lap weld and butt weld pipe or tubes—Gross tons.			Seamless pipe or tubes—Gross tons		
	Iron.	Steel	Total welded	Hot finished	Cold drawn	Total seamless
Black, standard	75,648	1,301,099	1,377,747	6,619	627	7,246
Galvanized	41,859	484,242	526,101	1,958		1,958
Oil country goods	21,568	1,306,726	1,328,294	444,632	1,446	446,078
Mechanical tubes				26,393	78,549	104,942
O.D. & miscellaneous		109,520	109,520	7,754	33,351	41,105
Boiler tubes	19,361	41,492	60,853	133,580	40,420	174,000
Total	159,436	3,243,079	3,402,515	620,936	154,393	775,329

PRODUCTION OF MISCELLANEOUS ROLLED PRODUCTS, GROSS TONS.

Products.	1922.	1923.	1924.	1925.	1926.
Hoops	222,139	220,835	179,373	205,049	189,814
Bands and cotton-ties	271,101	348,480	294,269	356,165	355,926
Long angle splice bars, fish-plate bars, tie-plate bars, etc	605,688	749,824	629,786	822,537	953,583
Rolled sheet piling	13,220	36,716	49,679	57,264	57,199
Railroad ties	14,811	20,167	14,968	13,820	13,278
Rolled forging blooms, forging billets, etc	*336,303	448,870	346,915	344,803	362,750
Blooms, billets, sheet bars, tinplate bars, etc. for export	11,299	781	437	187	430
Spike and chain rods, bolt and nut rods, horseshoe bars, hot rolled strips, shafting, tires, etc	†2,025,103	†2,577,249	†2,113,779	†2,814,719	†3,110,990
Total	3,489,564	4,402,922	3,629,209	4,614,550	5,043,949

* Exports included.

PRODUCTION OF CUT NAILS IN 100-LB. KEGS, 1895–1926.

Years.	Production.	Exports.	Consumption.	Years	Production.	Exports	Consumption.
1895	2,129,894	176,394	1,953,500	1911	967,636	255,854	711,782
1896	1,615,870	237,088	1,378,782	1912	978,415	208,568	769,847
1897	2,106,799	337,732	1,769,067	1913	842,038	84,885	757,153
1898	1,572,221	352,473	1,219,748	1914	769,665	76,676	692,989
1899	1,904,340	223,425	1,680,915	1915	775,327	94,878	680,449
1900	1,573,494	250,053	1,323,441	1916	764,835	106,451	658,384
1901	1,542,240	208,359	1,333,881	1917	461,674	101,362	360,312
1902	1,633,762	161,228	1,472,534	1918	418,811	85,668	333,143
1903	1,435,893	199,126	1,236,767	1919	394,477	65,423	329,054
1904	1,283,362	207,720	1,075,642	1920	844,583	86,427	758,156
1905	1,357,549	176,741	1,180,808	1921	538,834	24,512	514,322
1906	1,189,239	169,519	1,019,720	1922	810,206	78,602	731,604
1907	1,109,138	155,212	953,926	1923	829,604	51,515	778,089
1908	956,182	157,319	798,863	1924	741,668	47,537	694,131
1909	1,207,597	222,565	985,032	1925	736,111	36,265	699,846
1910	1,005,233	182,087	823,146	1926	662,403	23,979	638,424

Obituaries

WALTER H. CLINGERMAN, 58, president of the H. C. Frick Coke Co., Scottdale, Pa., died in Pittsburgh, June 13, following an operation. Mr. Clingerman, elected president in 1915 to succeed the late Thomas Lynch, was born at Altoona, Pa. His first experience was with the Pennsylvania railroad as a machinists' apprentice in 1885. In 1895 he was given leave of absence by the railroad to go to Everson, Pa., where he designed and superintended the construction of a car shop for the Frick company. He returned to the railroad for about a year, when he was appointed superintendent of the car shop he had built. In 1898 he was appointed assistant superintendent of the company's works and later when Mr. Lynch was made president, Mr. Clingerman become general superintendent. He was connected also with Connellsville & Monongahela Railway Co., Cumberland Coal Co., Hostetter Connellsville Coke Co., Mingo Coal Co., Republic Connellsville Coal & Coke Co., Sharon Coal & Limestone Co., United States Coal & Coke Co., United States Fuel Co., United States Steel and Carnegie Pension Fund, Youghiogheny Northern Railway Co., and numerous other companies.

* * *

James T. Anderson, 70, salesman for VanCamp Hardware & Iron Co., Indianapolis, for 44 years, died recently at his home in Indianapolis.

* * *

Frank N. Brayer, 72, for 20 years president and general manager, Cooperative Foundry Co., Rochester, N. Y., died June 2 at his home in Rochester.

* * *

John L. Forsberg, 48, assistant superintendent of the Spring wire department, South works of the American Steel & Wire Co., Worcester, Mass., died at his home there, June 5.

* * *

James Curley, 81, the man who rolled the first rail at the Edgar Thomson works of the Carnegie Steel Co., Braddock, Pa., and who for many years was employed as a roller in the mills there, died at Swissvale, Pa., June 10.

* * *

Charles Cartwright, 97, a pioneer of the iron and steel industry, died at his home in Gary, Ind., recently. Mr. Cartwright was born in Shropshire, England. He entered the rolling mills immediately after coming to the United States in 1849, and had the distinction of operating the first three-high mill when the first rail was rolled at the Cambria works in Johnstown, Pa., in 1853. Subsequently he was connected with the Cartwright-McCurdy Co., Youngstown, O., and at the formation of the United States Steel Corp. retired and moved to Pittsburgh, where he lived. He enjoyed a wide acquaintance among the older generation of steel mill operators, among whom were Capt. William Jones; R. W. Hunt, the first mill chemist who later founded R. W. Hunt & Co., in Chicago; and John W. Fritz, of the Bethlehem Steel Co.

WALTER H. CLINGERMAN

* * *

Charles R. Wood, 58, associated with R. D. Wood & Co., Philadelphia, for many years, died in Chicago June 8, where he was attending the convention of the American Water Works association. He was educated at Haverford College, Haverford, Pa., and was associated with his father in the manufacture of glass, following his graduation. Later he entered the employ of the R. D. Wood & Co., and at the time of his death, was manager of its valve and hydrant sales department.

* * *

John Gorman, 70, president of the Moran Bolt & Nut Co. St. Louis, died May 7. Born in King's county, Ireland, Mr. Gorman went to St. Louis when he was nine years old. In his early years he was employed in St. Louis iron and steel manufacturing plants. He was the originator of a number of improved methods for producing nuts and bolts.

* * *

Horace R. Thurber, 76, died at his home in Auburn, N. Y., recently. He was a pioneer in the farm implement industry, his early employment being with the McCormick Harvesting Machine Co., Columbus, O. He was made manager of the Toronto and later Hamilton, Ont., branches of the International Harvester Co. of America.

* * *

J. R. Hall, 60, vice president of the Chandler Motor Car Co., Cleveland, died June 13 at his home, there.

He was a pioneer in Cleveland's automobile industry, having been associated with the Chandler company since its inception, as vice president in charge of production. Prior to the organization of the company, Hall was a member of the old Lozier Co., originally manufacturing bicycles and later motor boats and automobiles.

* * *

Charles Robinson Parsons, for many years assistant purchasing agent for the Mergenthaler Linotype Co., Brooklyn, N. Y., died June 5 at his home in Brooklyn. He was the son of the late George Wellinan Parsons, for some years a consulting engineer of the Bethlehem Steel Co., Bethlehem, Pa. Before Mr. Parsons came to Brooklyn he had been assistant sales manager of the Philadelphia branch of the Pennsylvania Steel Co.

* * *

Charles Francis King, 70, formerly a well-known mining engineer and said once to have been associated in some steel ventures with Andrew Carnegie, died recently in Brooklyn. He was graduated from Lehigh university in 1880. Mr. King was a life member of the American Institute of Mining and Metallurgical Engineers.

Machinery

Equipment Buying of the Last Week Proves to be Extremely Spotty With Few Sales and Only Scattered Inquiries

SPOTTY sales and few inquiries characterized the machine tool and equipment market last week in all important buying centers. One day will bring a number of fair purchases and the next two or three will be almost devoid of any action. The automotive industry is cutting little figure in current activity, most plants slowing down for the summer lull. Ford Motor Co., however, has purchased some equipment in the East and elsewhere and is inquiring for groups of equipment in preparation for production of the new model. Some railroad buying is noted in New York and Chicago, principally the latter. The crane market is quiet, except in Pittsburgh, where the National Tube Co. last week awarded eight cranes for its Lorain, O., works.

New York, June 14.—Machine tool demand is the dullest in more than a month. Both orders and inquiries of size are lacking and while there is a fairly good accumulation of pending business, sellers are none too confident that much of this will necessarily be placed in the near future. Among scattered buyers of few machines are General Electric Co., Schenectady, N. Y., Wright Aeronautical Corp., Paterson, N. J., and New York Central railroad. Railroad buying, in the main, is conspicuous by its absence. A pipe foundry in New Jersey has closed on a 48 by 24-foot heavy lathe and a locomotive company on an extra heavy-end drive lathe, both going to the Niles-Bement-Pond Co. A machinery plant in Hartford, Conn., has closed on a gage testing machine to the Pratt & Whitney Co.

Boston, June 14.—The usual summer depression is apparently on with the customary dearth of inquiries. Sale prices were low at the auction of the machinery of the Standard Thermometer Co., at which time the machinery pertaining to the manufacture of thermometers was bought in by a new corporation—Standard Thermometer, Inc.

Worcester, Mass., June 14.—The machine tool market is spotty. A fair volume of long pending specifications have been placed by one or two railroad interests and a Detroit automobile maker has been a good buyer of lathes in the Central Massachusetts market. Plants are fairly busy on orders placed in recent weeks, but new business is largely bench tool machines. A borer and milling machine was ordered by a midwest interest and the heavier tool business has shown more activity. Machine shop trade is little changed.

Pittsburgh, June 14.—While machine tools have had just an ordinary sale this past week, featured by a fair number of single items in scattered directions, the crane market has received some impetus by reason of the award by the National Tube Co. of eight cranes for Lorain, O. The order for four 20-ton cranes for the seamless tube mill went to the Morgan Engineering Co., Alliance, O., and the order for four cranes for the blooming mill, including a 60-ton, went to the Alliance Machine Co. Machine tool inquiries are light and no new lists are out. The third quarter list of the Westinghouse Electric & Mfg. Co. has not put in its appearance as yet. Notwithstanding the quiet market at present, machine tool sellers are confident that a period of four to six weeks of good business will be enjoyed before the usual summer lull sets in. New crane inquiries are not developing.

Chicago, June 14.—Santa Fe railroad is buying further on its list, which has been before the trade for some months. This road has closed on a 23-inch lathe, two 18-inch lathes, three 20-inch lathes, two 26-inch lathes and a 24-inch shaper. Several St. Louis railroads have come into the market for some isolated single items. Among these roads are Missouri Pacific and Wabash. Canadian National railways is inquiring in this market for several tools, and Burlington has a few single inquiries out. A Chicago district industrialist ordered a 25-inch x 16-foot lathe. The market has been fairly active for sheet metalworking and arc welding machine tools.

Cleveland, June 14.—Business is all but stagnant for machine tools and shop equipment in this territory for the majority of dealers. Orders are few and inquiries are almost nothing. On the other hand, a few houses find a day now and then when sales come in of their own accord. On the whole, however, business is spotty and extremely unsatisfactory. Bids have been tabulated on the 13 machines for the Cleveland board of education, but definite action has not been taken. Ford Motor Co. continues to ask quotations on small groups of machines.

CRANE ORDERS PLACED

Twenty-one cranes, including twelve 3-ton trolley hoists, eight single I-beam 3-ton cranes and one 2-ton transfer crane, for Western Gas & Construction Co., Fort Wayne, Ind., to Shepard Electric Crane & Hoist Co.

Four 20-ton cranes for seamless tube mill of National Tube Co., Lorain, O., three with four hooks and one with two hooks, to Morgan Engineering Co.

Four cranes, including one 60-ton with 10-ton auxiliary, one 15-ton and two 15-ton for blooming mill of National Tube Co., Lorain, O., to Alliance Machine Co.

Two 40-ton electric trolleys for New York Central railroad to Shaw Crane works.

Two 15-ton double-hook cranes for Ford Motor Co., Detroit, to Alliance Machine Co.

Two 1-ton jib cranes for Wheeling Steel Co., Wheeling, W. Va., to Alliance Machine Co.

Two 150-ton ladle cranes, understood to be for manufacturer in Middle West, to Alliance Machine Co.

Two 20-ton gantry cranes for Colorado Fuel & Iron Co., Denver, to Alliance Machine Co.

Among single orders were: 5-ton single I-beam crane for Buick Motor Co., Flint, Mich., to H. D. Conkey & Co.; 2½-ton push crane for Magnum Cotton Oil Co., Magnum, Okla., to H. D. Conkey & Co.; 1-ton push crane for B. F. Goodrich Co., Akron, to H. D. Conkey & Co.; 1½-ton handpower crane for Wright Aeronautical Corp., Paterson, N. J.; to Box Crane & Hoist Corp., this contract previously reported as going to unnamed builder; used locomotive crane for General Crushed Stone Co., Easton, Pa.; to unnamed seller; 10-ton crawler crane for Sinclair Oil & Gas Co., Tulsa, Okla., to American Hoist & Derrick Co.; 3-ton used electric crane for Haskell & Bros., Brooklyn, N. Y., for operation in a stone yard, to unnamed seller; 10-ton soaking pit crane for Otis Steel Co., Cleveland, to Alliance Machine Co.; 5-ton handpower crane for Longview Fibre Co., Longview, Wash., to Cyclops Iron Works.

CRANE ORDERS PENDING

Used steam shovel crawler equipped with ¾-yard dipper for C. C. Trompton, Marion, Va.; bids asked.

100 ton electric overhead crane for power house installation for Henry L. Doherty, New York; award expected shortly.

Arranges Gas Course

A short course in industrial gas engineering, offered by the Illinois Gas association, will be held at the University of Illinois, Urbana, Ill., June 20-July 2. Combustion, furnace construction and design, industrial heat applications, economics of modern factory productions, temperature control, insulating materials, hotel and restaurant work, etc., will be among the subjects discussed. The tuition fee is $20. Upon successful completion of the work, the Illinois Gas association will issue official certificates, as well as cash awards to the two students having the highest grades in the final examination. Inquiries should be addressed to A. B. Greenleaf, Room 325, Peoples Gas building, Chicago.

Among the faculty engaged to instruct are the following: W. Trinks, professor of mechanical engineering, Carnegie Institute of Technology; E. E. Ferris, professor of salesmanship, New York university; F. A. Russell, professor of organization and operation, University of Illinois; Vincent S. Day, professor of special research, University of Illinois; Kirke Taylor, president, National Association of Purchasing Agents; and W. A. Darrah, president, Continental Industrial Engineering Co.

Leach Steel Corp., Buffalo, has changed its capital from 500 shares to 3000 shares.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

GULF States Steel Co., Birmingham, Ala., is working out a program of betterments which will cost about $3,000,000. The additions will include increased coke oven capacity and electrification of practically all its works. Larger furnace capacity is also being considered. Conditions at coal and ore mines will be bettered.

* * *

REPUBLIC Iron & Steel Co. is developing its coal property at the Sayreton mines, near Birmingham, Ala., where a new mine has been opened. A steel tipple is under construction and a compressed air hoist is being installed. The air is compressed by electric motor but peak demands are met by the air rather than the power lines.

* * *

AMERICAN ZINC PRODUCTS CO., Greencastle, Ind., has started operation of its new strip zinc mill, recently completed, and is producing ribbon or strip zinc in coils in a full line of gages and sizes. This company has been manufacturing sheet zinc in various forms for ten years. It produces a special deep-drawing quality for deep stamping, spinning and forming requirements.

* * *

CANADIAN Electric Railway association has elected the following officers: President, H. E. Weyman, manager of Levis Tramways Co.; honorary president, H. W. McLimmont, president and general manager, Winnipeg Electric Co.; vice president, D. W. Harvey, general manager, Toronto Transportation commission; treasurer; J. E. Richards, manager and treasurer, London and Port Stanley railways, auditor.

* * *

LANCASTER Malleables & Steel Corp. has been organized at Lancaster, N. Y., and will take over the plant and property of the American Malleables Co. in Lancaster. Work has been started rebuilding the burned finishing department building and operations will be resumed at once. W. B. Symmes, New York, is president of the new company, and J. E. Patterson, formerly with the Gould Coupler Co., secretary. Bert E. Weidle, formerly with the American Radiator Co., will be in charge of operations and Frank C. Johnson, formerly with the American Malleables Co., in charge of finance. American Malleables Co., from which the plant was bought, has another plant at Owosso, Mich.

* * *

TUCKER Machine Co., Easton Center, Westport, Conn., has been incorporated to take over the business of the same name, formerly a partnership between Arthur J. Tucker and Henry B. Tucker. The former is president and the latter secretary and treasurer of the new company. The company is distributor for engines, water systems, electric plants and farm machinery. It represents the Fairbanks Morse Co., and Emerson Brantingham Co.

* * *

FOSTER MERRIAM CO., Meriden, Conn., manufacturers of furniture casters, cabinet hardware and gray iron, brass, bronze and aluminum castings, has disposed of the manufacture and sale of its line of casters to the Bassick Co., Bridgeport, Conn. This is done to give room for expansion of its other departments and its foundry facilities will be enlarged. It also will continue its lines of cabinet hardware, furniture trimmings and specialties.

* * *

TAYLOR WELDER CO., Winfield Electric Welding Machine Co. and Winfield Mfg. Co., all of Warren, O., will be merged into one company under the name Taylor Winfield Corp., effective July 1. An addition to the plant is now under way to increase its output. Albertus C. Taylor is president and general manager of the new company, G. P. Gillmer vice president, J. H. Ewalt treasurer, and N. H. Cobb secretary. Directors are: A. C. Taylor, L. Jennings, Fred W. Platt, N. H. Cobb, J. H. Ewalt, G. P. Gillmer, W. A. Wilson and W. A. Jones.

Emil Gathmann, Gathmann Engineering Co., Baltimore, has been elected chairman of the Washington-Baltimore chapter of the American Society for Steel Treating. Other officers are: G. W. Quick, bureau of standards, vice chairman; and H. K. Herschman, bureau of standards, secretary-treasurer.

Resale Equipment News

PLANTS of the Hadfield-Penfield Steel Co. at Willoughby, Mansfield and Bucyrus, O., were sold at receiver's sale June 9 at Bucyrus to Morton D. Joyce, New York, son of the chairman of the board of the National Surety Co., New York. The latter had settled with the government on the claim of $1,800,000 growing out of war contracts. Bids for the three plants separately totaled $485,000 while the bid of Mr. Joyce for the three was $510,000. This bid is expected to be confirmed by the court. It is believed a company will be organized to take over and operate the plants, which have been kept active and are busy.

* * *

Real estate, machinery goodwill and other assets of the McCaffrey File Co., 1831 North Fifth street, Philadelphia, will be offered at receiver's sale June 21 on the plant premises. The real estate includes a 3-story brick factory, a forge shop, cutting, grinding, machine and hardening shops, boiler and engine rooms. All machine equipment, dies, jigs, fixtures, patterns and raw material will also be sold. Samuel T. Freeman & Co., Philadelphia, auctioneers, have charge of the sale.

Sales Calendar

June 16—Postponed date for receiving bids for assets of Henry E. Pridmore Inc., Chicago.

June 21—Receiver's auction real estate and equipment of McCaffrey File Co., Philadelphia.

June 23—Bankruptcy auction of assets of American Tube & Pipe Bending Co., Mineral Ridge, O.

Current Statistics of Industry

Galvanized Pail and Tub Shipments Rise

Washington, June 14—Production of galvanized pails and tubs in April dropped to 183,812 dozen from the high point of 202,393 dozen in March. The April mark is higher than all other months, however, since the department of commerce began compiling the statistics. The statistics on shipments of pails and tubs, as reported by fifteen manufacturers, show an increase in April to 198,711, from the March total of 182,692. Other comparisons and classifications follow:

PAILS AND TUBS

In Dozens

1926	Production	Stocks on hand end month	Orders shipped
April	91,707	109,858	109,228
Total (4 mos.)	498,799	.....	500,649
May	95,929	108,672	103,455
June	87,205	104,435	96,437
July	108,631	92,340	119,663
August	127,366	86,963	134,323
September	135,572	.....	140,491
October	143,038	.....	140,778
November	114,844	.....	88,520
December	118,525	.....	101,356
Total, 1926	1,429,909	.....	1,425,672
1927			
January	131,006	.....	141,817
February	138,788	.....	165,707
March	202,393	.....	182,692
April	183,812	.....	198,711
Total (4 mos.)	655,999	.....	688,927

OTHER

In Dozens

1926			
April	44,434	60,731	48,182
Total (4 mos.)	194,795	.....	196,362
May	57,568	61,047	49,926
June	54,937	64,308	48,940
July	38,779	57,820	41,652
August	44,900	56,208	44,911
September	42,219	.....	43,060
October	38,847	.....	41,295
November	32,865	.....	31,321
December	31,393	.....	22,025
Total, 1926	536,103	.....	519,492
1927			
January	30,763	.....	31,903
February	39,018	.....	36,123
March	32,942	.....	30,980
April	30,423	.....	33,785
Total (4 mos.)	133,402	.....	132,970

Other data no longer compiled.

Machinery Exports Gain

Exports of industrial machinery from the United States in March amounted to $14,036,000 and represented a substantial gain over the trade for March, 1926 and February, 1927, according to statistics compiled by the industrial machinery division of the department of commerce, Washington. The shipments for March 1926 totaled $12,857,000 and for February, 1927, $12,275,000. Trade for the first quarter of 1927 has been maintained at a much higher level than during the corresponding three months of 1926. Average monthly exports for the 1927 period amounted to $13,752,798, as compared with $12,339,411 for the three-month period of 1926, and an average of $13,061,005 for the entire year 1926. During March, gains of approximately $1,000,000 each were recorded in exports under the heads of "construction and conveying machinery" and "metalworking machinery."

April Enameled Ware Shipments Drop

Washington, June 14.—April shopments of enameled ware reported by 18 manufacturers to the department of commerce, totaled 337,181 dozen, compared with 440,671 dozen in March. This total was the lowest for the first four months of this year. Further monthly comparisons follow:

SHIPMENTS OF ENAMELED SHEET-WARE

(In dozens)

1927	Total	White	Grey	Colored
January	350,748	197,278	140,267	13,203
February	372,452	202,633	150,634	19,185
*March	440,671	240,867	172,673	27,131
April	337,181	175,187	143,257	18,737
Tot. 4 mos.	1,501,052	815,965	606,831	78,256

*Revised.

Locomotive Sales Gain

Washington, June 14—Shipments of railroad locomotives in May totaled 109, compared with 98 in April, and 140 in May 1926, according to statistics compiled by the department of commerce. Unfilled orders also increased in May. Further comparisons follow:

Year and Month	Shipments Total	Shipments Domestic Steam	Shipments Domestic Electric	Unfilled orders Total	Unfilled orders Domestic Steam	Unfilled orders Domestic Electric
1920	2,683	1,318	306	.....	.....	.....
1921	1,558	830	221	.....	.....	.....
1922	1,405	1,056	128	.....	.....	.....
1923	3,378	2,982	207	.....	.....	.....
1924	1,554	1,312	99	.....	.....	.....
1925	1,216	755	144	.....	.....	.....
1926						
May	140	105	14	726	585	46
Total 5 mos.	742	565	70	.....	.....	.....
June	159	133	11	667	522	53
July	132	82	20	555	445	36
Aug.	124	78	16	525	455	26
Sept.	134	109	13	498	386	24
Oct	151	124	15	390	286	20
Nov.	128	109	15	517	391	27
Dec.	185	152	17	398	297	14
Total	1,755	1,352	177	.....	.....	.....
1927						
Jan.	57	16	8	405	334	16
Feb.	80	69	10	396	314	22
March	137	84	11	385	301	48
April	98	72	23	327	255	35
May	109	77	15	428	380	28
Total 5 mos.	481	318	67	.....	.....	.....

Nonferrous Interests Have Merged

Organization of the National Bearing Metals Corp., with offices at St. Louis and New York, has been completed with the election of officers. This corporation is a consolidation of six companies engaged in the production of nonferrous castings and composition metal. Bronze Metal Co., New York; More-Jones Brass & Metal Co., St. Louis; Damascus Bronze Co. and Keystone Bronze Co., Pittsburgh; Southern Brass Works, Portsmouth, Va.; and Brady Brass Co.

Officers of the new corporation are: Chairman, Alexander Turner, New York; president, John B. Strauch; vice presidents, Thomas H. Wright, Arthur N. Dugan, S. W. Crawford, A. Y. Evins and R. S. Herman; secretary and assistant treasurer, Frank G. Senn; treasurer and assistant secretary, J. A. Neuwirth.

Steel Employment in April Reduced Slightly

Washington, June 14.—A slight falling off in employment in iron and steel plants in April is reported by the bureau of labor statistics. The bureau received reports from 207 plants which gave their March employment as 277,212, decreasing slightly in April to 276,333, or 0.3 per cent. Their payrolls increased from $8,732,626 in March to $8,814,297 in April, or 0.9 per cent.

One hundred fifty-three structural ironwork plants gave their March employment as 22,572, increasing in April to 22,721, or 0.7 per cent. Their payrolls decreased from $656,355 in March to $639,754 in April, or 2.5 per cent.

One hundred and fifty-six machine tool plants reported their March employment at 31,075 decreasing in April to 30,498, or 1.9 per cent. Their payrolls decreased from $958,783 in March to $922,048 in April, or 3.8 per cent.

Iron and steel imports at Philadelphia in the week ending June 4 were small, and included 141 tons of structural shapes from Belgium and 25 tons of scrap iron from Sweden.

Construction and Enterprise

Concise Timely Business Building Opportunities
from the Field of Industry

LITTLE ROCK, ARK.—Lime Products Co., A. B. Banks, president, will build a cement manufacturing plant at White Cliffs, eight miles north of here. A. M. Lund, Little Rock, is engineer.

LOS ANGELES—Metal Art Works, 1216 East Seventy-ninth street, has been incorporated to make ornamental lamps, fixtures and other devices, and is in the market for materials and equipment.

OAKLAND, CALIF.—Liberty Ornamental Iron & Wire Works Inc., Twenty-first and Filbert streets, has been incorporated with $50,000 capital to manufacture ornamental iron fence, balconies and railings and has a plant in operation now. (Noted March 10)

RICHMOND, CALIF.—Parsons Casket Hardware Co., Belvidere, Ill., has awarded the contract for the first unit of a 1-story factory, 50 x 100 feet, here.

SACRAMENTO, CALIF.—Universal Machin- Co. plans to build an addition which will double the plant's capacity.

SACRAMENTO, CALIF.—Universal Machinery Mfg. Co., H. W. Funke, president, contemplates building a foundry near Long Beach, Calif., for the manufacture of steel castings.

DENVER—Three Forks Portland Cement Co., Ideal building, will build a new mill at Hanover, Mont., including a power house and machine shop.

LOVELAND, COLO.—Air Valve Ignition Co. has been incorporated, and all equipment is in place, with production expected to start inside of 90 days.

JACKSONVILLE, FLA.—Mechanical Merchandising Machines Inc. has been incorporated to manufacture vending machines by J. C. Vinson, 4609 Bayshore boulevard.

ATLANTA, GA.—Southern Saw Service has been incorporated here and is establishing a plant at 1594 Evans Drive, S. W. for the manufacture of meat saws, meat grinding equipment and other devices by W. S. Anderson.

TALLAPOOSA, GA.—Dixie Horseshoe Mfg. Co. has been incorporated and purchased a plant here. W. H. Jackson is president.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

CHICAGO—Boeling Airplane Transport Co. has awarded the contract for a 1-story hangar to the Austin Co., 510 North Dearborn street.

CHICAGO—Automobile Equipment Mfg. Co., 1908-12 Indiana avenue will rebuild that part of its plant damaged by fire recently.

CHICAGO—International Harvester Co., 606 South Michigan avenue, will build an addition at East Moline, Ill.

CHICAGO—Arrow Machine Co. will build a machine shop 33 x 125 feet at 1624 North Kilbourne avenue.

CHICAGO—J. A. Nelson, 1930 Hudson avenue, will build a 1-story machine shop, 24 x 100 feet. E. N. Braucher, 228 North La Salle street is architect.

CHICAGO—Clark Keefe Well Supply Corp., 1301 Larrabee street, has been incorporated with $20,000 capital to manufacture brass and iron products by Maurice Garvey, 30 North Michigan avenue, suite 2017.

CHICAGO—Able Sign Erectors Inc., 1037½ Addison street, has been incorporated with $20,000 capital to deal in signs for advertising purposes by Charles F. Cooke, 1720 South Michigan avenue.

CHICAGO—Harding Boiler Co., Fifty-fourth avenue and Eighteenth street, has been incorporated with $100,000 capital to manufacture heating apparatus, by Frank T. Jordan, 39 South LaSalle street.

CHICAGO—William Galloway & Sons Co., 8 South Dearborn street has been incorporated with 400 shares no par value to manufacture machinery and hardware specialties, by Chester D. Kern, 111 West Jackson boulevard, correspondent.

CICERO, ILL.—Frank and Anna Kolas, 5805 West Twenty-second street, will build a machine shop addition 47 x 125 feet.

MOLINE, ILL.—Montgomery Elevator Co. will build a 2-story factory.

SPRINGFIELD, ILL. — Henson-Robinson Hardware Co., 812 East Adams street, plans to build a 3-story factory 44 x 60 feet.

EVANSVILLE, IND.—Evansville Malleable Casting Co. has been incorporated with $100,000 capital by Daniel Wertz.

FT. WAYNE, IND.—Utility-Strate Mfg. Co. has been incorporated with $10,000 capital to manufacture tools and machines, by Robert J. Jauch and Leon J. Baker.

GRIFFITH, IND.—Griffith Steel Corp. has been incorporated with $25,000 capital and 2500 shares no par value by W. J. Harvey.

INDIANAPOLIS—Eel River Power Co., 610 J. F. Wild building, will build a hydro-electric power plant.

INDIANAPOLIS—A. Paetz, 33 West Maple road, will build a 1-story machine shop and garage, 52 x 112 feet.

INDIANAPOLIS—Stone Auto Co., 536 East Washington street, will build a 2-story machine shop and service station 50 x 195 feet.

INDIANAPOLIS—Challenge Gauge & Tool Co., 560 North Elder street, has been incorporated with 240 shares no par value to manufacture machinery and tool parts by Carl F. Millican. (Noted March 10)

PLYMOUTH, IND.—Plymouth Body Works, Floyd Clausen, general manager, contemplates building a 1-story addition.

BOSTON—United States Sandwich Shops Inc. has been incorporated with $10,000 capital to manufacture vending machines and other devices by Daniel Reilley, 18 Franklin street, Worcester, Mass.

BROCTON, MASS.—Wardrobe Checking Corp. has been incorporated with $100,000 capital to manufacture checking machinery and tools, by Ray Richmond, 302 Ash street, Brocton, Mass.

CAMBRIDGE, MASS.—Federal Iron Works,

Iron and Manganese Ores and Minerals

LAKE SUPERIOR ORES

Iron Ore

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, alongside docks, Atlantic ports

Spanish manganiferous ore, 54 per cent iron and 2 to 4 per cent manganese	10.25 to 10.50
North African low phosphorus	10.50 to 11.50
Swedish foundry or basic, 62 to 65 per cent	9.00 to 9.50
Spanish foundry or basic, 52 to 56 per cent	9.00 to 9.50
North African foundry and basic 50 to 56 per cent	9.00 to 9.50

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metalic manganese contained.

Brazilian	37 to 38 cents
Indian	37 to 38 cents
Caucasian, 53 to 55 per cent washed	38 to 40 cents

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$17.25 to 18.00
Washed gravel, imported duty paid eastern tidewater, per ton	16.50 to 17.00

Charles and First streets, suffered damage by fire to its foundry recently.

SOUTH BOSTON—Massachusetts Auto Repair Co., 93 Willow street, will build a 1-story plant 84 x 100 feet at Dorchester, Mass.

LOCH RAVEN, MD.—Maryland Training School For Boys L. C. Faulkner, superintendent will build a central power plant for kitchen and laundry.

DETROIT—Cadillac Casket Co., 2370 Wabash avenue, will build a factory addition.

DETROIT—Detroit Grey Iron Foundry Co. will build an addition to its plant.

DETROIT—General Brass Co. has been incorporated with $362,500 capital, 60,000 shares no par value, to deal in brass and metals by W. S. Killam, 100 South Campbell avenue.

HOLLAND, MICH.—Lake Shore Brass Co. has been incorporated to manufacture brass, bronze and aluminum castings by A. W. Wiliden.

PONTIAC, MICH.—Fisher Body Corp., R. E. Brown, general manager, will build a 1-story manufacturing plant, 75 x 608 feet.

WAYNE, MICH.—Graham Body Corp., Detroit, has awarded the contract for a 1-story plant addition 100 x 600 feet here, to Hoffman Construction Co., Furniture building, Evansville, Ind.

ST. LOUIS—Wackman Welded Ware Co., 2420 South Seventh street, will build a 1-story addition, 30 x 82 feet.

ST. LOUIS—National Sales Machine Co., 1926 Chestnut street, plans to build a new factory for the manufacture of vending machines and parts. (Noted May 26)

TILTON, N .H.—Eastern Insulated Wire & Cable Co., Richard H. Stott, general manager, expects to start work shortly in its new plant here.

BAYONNE, N. J.—Supreme Oil Burner Co. has been incorporated with $125,000 capital, 2500 shares, no par value by Aaron A. Meiniker, Bayonne.

CARTARET, N. J.—U. S. Metals Refining Co. will build a 1-story industrial building.

ELIZABETH, N. J.—Lincoln Body Works has been incorporated with $125,000 capital to manufacture automobile bodies, by Feit & Feit, Newark, N. J.

NEWARK, N. J.—Huber Stoker Co. has been incorporated with $125,000 capital to manufacture machinery, by Stein & Stein, Paterson, N. J.

NORTH PLAINFIELD, N. J.—Thul Machine Co., 22 Harvard street, has been incorporated with $100,000 capital to manufacture tools, trucks and machinery.

BINGHAMTON, N. Y.—Ring Valve Motors Co. has been incorporated with 200 shares no par value to manufacture gasoline machinery by B. L. Babcock, Binghamton.

BROOKLYN, N. Y.—Mergenthaler Linotype Co., 29 Ryerson street, will build a 9-story industrial plant.

BROOKLYN, N. Y.—Brooklyn & Queens Screen Co. Inc., Joseph Alfandre, treasurer, 1576 Bushwick avenue, will build a 2-story factory, show room and office building.

BROOKLYN, N. Y.—Williams & Lequornick has been incorporated with $20,000 capital to manufacture electrical devices, by H. J. Schmidt, Richmond Hill.

BROOKLYN, N. Y.—Morrisey Oil Burner Corp. of New York has been incorporated with $10,000 capital by S. H. Silverman, 305 Broadway, New York.

BUFFALO—Donner Steel Co. is inquiring for a jib crane and a 3 to 5-ton electric hoist.

BUFFALO—New York Central railroad has awarded the contract for its new power house here to the Walsh Construction Co., Buffalo.

NEW YORK—Metallic Window Frame Corp. has been incorporated with $50,000 capital by R. H. Schenck, 119 West Fifty-seventh street.

NEW YORK—Sterling Automatic Machinery Co. Inc., 209 West 146th street, recently incorporated to manufacture vending machines,

Industrial Business Changes

FALK CORP., Milwaukee, has opened a branch office at 122 South Michigan avenue, Chicago, with C. H. Thomas in charge. The company manufactures steel castings, diesel engines and other devices.

* * *

Ajax Mfg. Co., Kalamazoo, Mich., has changed its name to Ajax Electric Co.

* * *

Concrete Engineering Co. is preparing to open new reinforcing bar warehouses in Los Angeles and San Francisco.

* * *

Universal Standard Sales Co., Detroit, has changed its name to Q-C Engineering & Tool Sales Inc.

* * *

Schmutz Mfg. Co., Inc., Louisville, Ky., manufacturer of sheet metal printing machinery has moved its offices to 1600 West Main street.

* * *

Tennant Steel Casting Co., Tacoma, Wash., has bought a controlling interest in the Interstate Foundry Co., Longview, Wash., whose plant has just been completed. Operations will be started shortly. J. C. Nunn, formerly of Tacoma, will be in charge.

* * *

Marvel Carburetor Co., Flint, Mich., has changed its name to Genesee Carburetor Co., and its capital has been decreased from $1,000,000 to $750,000.

* * *

National Bearing Metals Corp., New York, has bought the plants of the Keystone Bronze Co., Pittsburgh, including plots 107 x 449 feet, 107 x 185 feet and 100 x 106 feet, with mill buildings.

* * *

Moore Drop Forging Co., Springfield, Mass., has purchased the plant of the Anthracite Chain & Engineering Co., Hazelton, Pa., and is contemplating moving the business to the Springfield works.

* * *

Milwaukee Electric Crane & Mfg. Co., Milwaukee, has discontinued its sales office in Chicago and will be represented by Page & Ludwick, 14 East Jackson boulevard Chicago. This firm formerly handled this line in Chicago.

* * *

Keasby & Mattison Co., Ambler, Pa., manufacturer of asbestos products, has bought the plant of the Taylor Shipbuilding Co., 25 acres, on the Delaware river. The new owner will use the property for expansion of its plant.

* * *

Crescent Washing Machine Co. has sold its plant in New Rochelle, N. Y., and will move its machinery and materials to the plant of the Hobart Co. in Troy, O., which is reported to have purchased the Crescent company last fall.

* * *

Torrington Co., hardware, Torrington, Conn., has bought the Chicago Handlebar Co., Shelby O., maker handlebars and seat posts for bicycles and velocipedes. The machinery and equipment of the Ohio company will be installed in one of the Torrington Co.'s branch plants at Torrington.

* * *

Chain Belt Co., Milwaukee, manufacturer of chains, transmissions, elevating and conveying machinery, has moved its Chicago office to 222 West Adams street, room 1515. Products of the Stearns Conveyor Co., Cleveland, which company was bought recently by the Chain Belt Co., will also be handled.

expects to be in the market shortly for materials and equipment.

NEW YORK—Holfast Nozzle Corp. has been incorporated with $20,000 capital by A. Hirsch, 37 West Forty-fourth street.

NEW YORK—David Krieger Corp. has been incorporated with $2000 capital to manufacture machinery, by S. S. Leff, 200 Fifth avenue.

NEW YORK—Tolhurst Investors Corp. has been incorporated with 600 shares no par value to manufacture machinery, by Simpson, Thatcher & Bartlett, 120 Broadway.

NEW YORK—Lincoln Sheet Metal Works has been incorporated with $10,000 capital by B. Kaplan, 6601 Bay Parkway, Brooklyn, N. Y.

NEW YORK—Anaconda Copper Mining Co., with headquarters in this city, has closed on structural steel for a zinc plant at Butte, Mont.

NEW YORK—Brighton Steel Corp. has been incorporated with $100,000 capital, 2000 shares no par value, by Leventritt, Riegelmann, Carns & Schwartz, 44 Pine street.

NEW YORK—Master Chef Aluminum Co. has been incorporated with 400 shares no par value, to manufacture cooking utensile, by C. H. Herbst, 11 Park Place.

NEW YORK—Audak Engineering Corp. has been incorporated with 200 shares no par value to manufacture metal specialties, by L. Roth, 1400 Broadway.

NEW YORK—Empire Architectural Iron Works Inc., Randall avenue and Truxton street, has bought property on Craven street where it will build a new plant.

NEW YORK—Robins Dry Dock & Repair Co., 25 Broadway, has awarded the contract for a boiler and plate shop, 63 x 110 feet, at its Brooklyn, N. Y., yard, to Tilt-Hargan Co.

ROCHESTER, N. Y.—Metal Arts Co. Inc. will erect a 1-story building, 64 x 96 feet, to manufacture bronze advertising novelties and other devices.

CINCINNATI—Acme Radiator & Shield Co. Inc., 48-50 Vine street has been incorporated and will start production shortly.

CLEVELAND—Cleveland Ring Mfg. Co. has been incorporated with $500 capital by Francis B. Kavanaugh, 13605 Lake Shore boulevard.

CLEVELAND—Hickok Electric Instrument Co., R. O. Hickok, president, 10514 Dupont, will build a 2-story factory 30 x 42 feet.

CLEVELAND—River Smelting & Refining Co. will build a new factory 86 x 126 feet at Bradley road and the Baltimore & Ohio railroad.

CLEVELAND—Ohio Truck Body & Wagon Co., 3291 East Sixty-fifth street, has awarded the contract for a factory to A. Peck, 3033 East 130th street.

LANCASTER, O.—Lancaster Tire & Rubber Co., 168 East Long street, Columbus, O., is inquiring for three molding machines, two tire-making machines and three vulcanizers for its plant here.

NEWCOMERSTOWN, O.—Kilgore Foundry Co. has been incorporated with 1000 shares no par value, by Ross J. Thomas.

SPRINGFIELD, O.—Steel Products Engineering Co. will build a 1-story addition 15 x 125 feet. G. L. Ohmart Co. is architect and engineer.

ALLENTOWN, PA.—W. J. Gamble Corp. has been incorporated with $5000 capital to manufacture sheet metal products by William J. Gamble, 645 Mill street, Allentown; May E. Gamble, 180 North Munn avenue, East Orange, N. J.; Ronald N. Campbell, Allentown.

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$43.00
Pennsylvania, No. 2	35.00
Ohio, No. 1	43.00
Ohio, No. 2	35.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00
Kentucky, No. 1	43.00
Kentucky, No. 2	35.00
Missouri, high grade	43.00
Missouri, No. 1	35.00
Maryland, No. 1	43.00 to 44.00
Maryland, No. 2	35.00
Georgia and Ala. No. 1	40.00 to 45.00
Georgia and Ala. No. 2	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Joliet, Ill.	52.00
Birmingham	49.00

MAGNESITE BRICK

(Per Net Ton)

9 x 4½ x 2½	65.00

CHROME BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	45.00

BLAWKNOX, PA.—Blaw Knox Co., steel manufacturers, will build a 10-story plant addition, 100 x 160 feet.

HARRISBURG, PA.—Elliott-Fisher Co., makers of adding machines is having plans for an addition to its plant prepared by Harris Richards, Drexel building, Philadelphia.

PHILADELPHIA—Philadelphia Wood Scouring & Carbonizing Co. has awarded the contract for the construction of a storoge building 80x302 feet, to Hughes Foulkrod Co.

PHILADELPHIA—A $37,400 warehouse will be erected at Lehigh and Edgemont streets by the Maurer Co., 910 North Front street, general contractor, for Harry W. Gwinner.

PHILADELPHIA—Bids have been received on a factory building for Charles Lenning & Co., Richmond & Kennedy streets. Charles A. Blatchley is architect.

PHILADELPHIA—Dravo Construction Co. Diamond Bank building, Pittsburgh, has been awarded the contract for a 4-girder span and one double leaf bascule span bridge over the Schuylkill river.

PHILADELPHIA—Standard Heating Co. has been incorporated with $25,000 capital to manufacture heating systems and stoves, by Edward J. Lee, 145th street and Broadway, New York; Harold W. Ransay, and Phillip T. Brooks, both of Newton Square, Pa.

PHILADELPHIA—Plans for an $8,000,000 terminal in this city for the Baltimore & Ohio railroad have just been announced by Daniel Williard, president. The proposed structure will be erected at Twenty-fourth and Chestnut streets, work to begin this year.

PITTSBURGH—R. D. Nutall Co. will build a manufacturing building across the street from the company's foundry.

PITTSBURGH—Holland Furnace Co., Seventh and Bigelow streets, plans to build a 1-story plant 1111-1129 Behan street.

PITTSBURGH—J. V. Walsh Sales Corp., 705 Wabash building, has ben incorporated with $10,000 capital to manufacture machinery and mechanical appliances by J. V. Walsh.

PITTSBURGH—Hamburg Brothers Inc. has been incorporated with $50,000 capital to manufacture radio appliances and supplies by Elmer A. Hamburg, 405 North Murtland street, Louis Hamburg Jr., 5701 Melvin street; Joseph Hamburg, 405 North Murtland street, all of Pittsburgh.

PITTSBURGH—Stronach Nail Co. has been incorporated with $5000 capital to manufacture metal products of every description by John S. Boyd Jr., 3949 Grenet street.

PITTSBURGH—McQuillan Bros. has been incorporated with $10,000 capital to manufacture and repair machinery by Isaac G. McQuillan, 121 South Graham street.

PITTSBURGH—Lane Equipment Mfg. Co. has been incorporated with $5000 capital to manufacture tools and machinery by J. R. McCreery, 424 Frick building.

PITTSBURGH—Pittsburgh Stencil & Tool Co. has been incorporated with $25,000 capital to manufacture metal stamps by P. J. Rickenbach, 217 Sairo street.

PITTSBURGH—Packers Specialty Co. has been incorporated with $100,000 capital to manufacture machinery and machine parts by Richard H. Fried, 630 North Negley avenue.

PORTAGE, PA.—Portage Bronze Electric Co. has been incorporated with $10,000 capital to manufacture brass pumps, electric machinery and other devices by Francis R. Skelly, 160 Hammer avenue.

READING, PA.—The Textile Machine Works has awarded structural steel for a plant addition, to the McClintic-Marshall Co.

READING, PA.—Viking Automatic Sprinkler Co. Inc. has been incorporated with $10,000 capital to manufacture automatic sprinkling devices by A. E. Johnston, Hastings, Mich.; Raymond C. Wilson, 340 North Ninth street, Reading, Pa.; J. A. Link Jr., Hatfield, Pa.

ST. MARYS, PA.—Nilco Lamp Co., R. W. Roloff, general manager, will build a 2-story factory.

WEST HOMESTEAD, PA.—Jackson & Davis Electric Engineering Co. has been incorporated with $10,000 capital to manufacture electric machinery and appliances by Charles Davis, 113 Twenty-first avenue, Munhall, Pa.; David J. Jackson Jr., 134 Madeline street, Carrick, Pa.; Howard G. Mowry, 297 Seventh avenue, West Homestead, Pa.

PAWTUCKET, R. I.—City council has completed plans for a municipal garage, machine and repair shop on which work will start soon.

PROVIDENCE, R. I.—American Chain Co. has been incorporated with $25,000 capital by Frederick W. Bopp.

ABERDEEN, S. DAK.—Northwestern Public Utilities Co., Huron, S. Dak., has let general contract to Siems, Helmers & Schaffner, 1014 Guardian Life building, St. Paul, Minn., for rebuilding power plant.

MEMPHIS, TENN.—Tennessee Metal Mfg. Co. will build a 1-story building.

DALLAS, TEX.—John E. Mitchell Co., 600 South Sixth street, St. Louis, has purchased property here and will establish a plant for the manufacture of cotton gin machinery, equipment and parts.

FORT WORTH, TEX.—Southwestern Brass Works has been incorporated by A. B. Garrett and J. P. Mennell.

FORT WORTH, TEX.—L. A. Eberhart, 2244 West Rosedale street, has been incorporated with $50,000 capital to manufacture oil well supplies.

FORT WORTH, TEX.—Fort Worth Steel & Machinery Co. Guy L. Waggoner, president, has acquired new property, including buildings, and will maintain a complete structural steel mill and tank and metal shop.

NORFOLK, VA.—Barnum-Bruns Iron Works Inc. will build a new plant 50 x 65 feet for

the manufacture of ornamental iron specialties. (Noted June 2)

NORFOLK, VA.—Hampton Roads Motors Inc., 418 Dickson building, plans to build a plant for the manufacture of air-cooled motors and parts.

HOQUIAM, WASH.—Grays Harbor Railway Light Co. plans to enlarge its present Electric Park power plant.

HUNTINGTON, W. VA.—Huntington Boiler Works, Second avenue and Twelfth street, will build a 1-story plant addition, 69x110 feet.

HUNTINGTON, W. VA.—Huntington Boiler Works Inc. plans to build a 1-story addition, 70 x 110 feet for boiler and plate department expansion.

DE FOREST, WIS.—Equipment contracts for the new city water works plant costing $40,000 have been placed as follows: two centrifugal pumps and motors, Allis-Chalmers Mfg. Co., Milwaukee; one 100-foot air compressor, Wisconsin Foundry & Machine Co., Madison, Wis.; meter, Neptune Meter Co., Chicago.

JANESVILLE, WIS.—Parker Fountain Pen Co., George S. Parker, president, will build a factory addition.

MILWAUKEE—A 2-story addition, 40 x 44 feet, is being built for the Milwaukee Gear Co. at 1222 Third street.

MILWAUKEE—The ornamental iron works of Emil Lehmann at 1013 Center street are to be enlarged by the construction of a 1-story addition, 31 x 40 feet.

MILWAUKEE—Snap-On-Wrench Co., 1270 South Pierce street, manufacturer of wrenches and tool sets has increased its capitalization from $100,000 to $200,000 and contemplates enlarging its present plant.

WILWAUKEE—Bayley Blower Co. has been incorporated with $100,000 capital to manufacture steam fans and refrigerating apparatus by F. C. John, 120 East Wisconsin avenue, Milwaukee.

MILWAUKEE—American Home Equipment Co. has been incorporated to manufacture dishwashers and other automatic labor saving machines and devices for the home, by Stuart H. Markham and Fred D. Clinton, 203 East Juneau avenue.

MILWAUKEE—Ames Iron Works division of the Pierce, Butler & Pierce Mfg. Corp., Oswego, N. Y., is low bidder at $13,997 for furnishing the city of Milwaukee two 75-kilowatt direct connected uniflow engine generator sets for the North Point pumping station.

NORWALK, WIS.—A bond issue of $35,000 has been authorized for the construction and equipment of a city water plant. Plans are being prepared by Druar & Milinowski, consulting engineers, Globe building, St. Paul.

RACINE, WIS.—Work has been started by the Gold Medal Camp Furniture Co., for an addition to its plant and offices at 1700 Packard avenue.

RACINE, WIS.—Century Motor Co., 407 Lake avenue, is about to let contracts for a new $40,000 garage and repairshop, 100 x 125 feet, 1-story, fireproof. Plans are by Architect Frank J. Hoffman, Racine.

WAUSAU, WIS.—American Device Corp. has let general contract to Theo. Koh, 924 Jefferson street, for a 1-story, 86 x 200-foot factory building on Plumers Island. L. H. Wheeler is manager.

Business in Canada

CALGARY, ALTA.—Canadian Stoker Mfg. Co. Ltd. has been incorporated to carry on the business of iron and steel founder, metal worker and machinist, with $150,000 capital stock by Otto F. Hammill, Claude E. Knowler, Clayton H. Harden and others.

VANCOUVER, B. C.—Jantzen Knitting Mills of Canada Ltd. has been incorporated to carry on the business as a knitting company and to manufacture knitting machines, with $250,000 capital and 250,000 shares of no par value, by Sydney W. Miller, George R. Davidson, Max. M. Grossman and others.

WINNIPEG, MAN.—Grace Mines Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals with 100,000 shares of no par value, by Robert B. Graham, Edward H. Crawford, Thomas M. Long and others.

COBALT, ONT.—Homack Mines Corp. Ltd. has been incorporated to carry on the business of a mining, milling, reduction and developing company with $5,000,000 capital by Emerson T. Coatsworth, Kenneth D. MacKenzie, Cuthbert P. Coatsworth and others.

GORE BAY, ONT.—Town council contemplates building power plant here to cost $11,000.

HAMILTON, ONT.—Frid Construction Co., Hamilton, Ont., is in the market for a second hand double drum hoisting engine, 8 x 12 inches.

HAMILTON, ONT.—International Patricia Mines Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals with $350,000 capital by Robert R. Evans, Henry A. Burbidge, John D. Scott and others.

HAMILTON, ONT.—Kawartha Smelters Ltd. has been incorporated to carry on the business of manufacturer, founder and smelter, with a capital of 10,000 shares of no par value by George F. Coleman, Wilfred H. Montague, and Samuel Banks Nelson.

OSHAWA, ONT.—Sullivan & Frid, 81 Victoria street, Toronto, Ont., have the general contract for a $15,000 addition to the plant of the Central Spring Co., 133 Ritson road north.

OSHAWA, ONT.—Bids are being received by Hutton & Souter, architects, 6 James street south, Hamilton, Ont., for a stamping mill, machine shop addition and enameling plant on Division street for the General Motors of Canada Ltd., Oshawa, to cost $750,000.

PORT, ARTHUR, ONT.—Nipigon Corp., which has been operating a sulphite pulp mill at Nipigon and controls several timber limits in Ontario, is completing plans for mills here to cost $7,000,000, one mill to be completed by the end of 1928, with daily capacity of 200 tons, and a plant with a capacity of 400 tons to be ready by 1931.

New Trade Publications

GALVANOMETERS—Leeds & Northrup Co., Philadelphia, manufacturers of electrical measuring instruments, has issued a catalog of its galvanometers. It is well illustrated and full descriptions and data are given.

SHAFT SINKING—E. J. Longyear Co., mining engineers, Minneapolis, has issued a bulletin presenting its operations. It is made up largely of halftones of mining operations the company has under way.

LIFT TRUCKS AND STACKERS—Lewis-Shepard Co., Boston, is circulating a bulletin covering its line of special purpose trucks and stackers and various types of platforms and boxes for use with them.

CASE HARDENING STEEL—Jones & Laughlin Steel Corp., Pittsburgh, has issued a bulletin on its special steel designed for case carburizing and forging. Background of the pages is enlarged photo-micrographs of the steel after varied heat treatment.

FORGED CAST GEARS—Hill Clutch Machine & Foundry Co., Cleveland, calls attention in a leaflet to advantages of its gears. They consist of forged steel teeth and a semisteel hub. Added strength of teeth is a feature Various types of gears are illustrated.

DIESEL ENGINE—A bulletin by the Chicago Pneumatic Tool Co. covers in full detail its solid injection diesel engine in 80 to 240 horsepower. Halftones show the engine and its parts and diagrams and tabular data cover the engineering aspects.

ELECTRICAL EQUIPMENT—General Electric Co., Schenectady, N. Y., has issued several current bulletins. They cover station oil circuit breakers, self-synchronous units for industrial and central station applications and induction motor panels. The latter is comprehensive and presents full engineering data.

MILLING ARBORS—Kearney & Trecker Corp., Milwaukee, manufacturer of milling machines, presents in a current bulletin the advantages of its standard arbors with the new standardized spindle end. It is illustrated by halftones of steels in its manufacture to assure perfect alignment and quality.

TRAMRAIL—Cleveland Electric Tramrail division of the Cleveland Crane & Engineering Co., Wickliffe, O., has issued a bulletin showing application of its tramrail equipment in order makeup departments. Efficient collection of items of an order and delivery to the loading point are featured. It is illustrated to show actual installations.

ELECTRIC RATES AND LOADS—Sangamo Electric Co., Springfield, Ill., has issued a pamphlet giving a brief account of various electric service rate systems and discussions of important factors involved in scientific load building. Application of the company's measuring devices to such determinations is pointed out. It is well illustrated by halftones and diagrams.

CONVEYORS—Mathews Conveyor Co., Ellwood City, Pa., tells the story of its equipment largely in pictures in a catalog just issued. A few pages of text are devoted to modern foundry transportation. The remainder of the catalog is given over to illustrations showing various uses of its conveyors in foundry work. Typical layouts also are shown. Engineering data and blueprints of details round out the publication.

STEEL FLOOR GRATING—Hendrick Mfg. Co., Carbondale, Pa., has issued a bulletin describing its types of interlocked steel grating for floors and stairs. Method of construction and application are show. A table of safe loads is furnished. Illustrations show actual installations. Special provision is made for making the edge of steps visible, to minimize accidents. A type of grating to armor concrete platforms and floors and reduce wear is also shown.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8 inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld		
½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
8 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld		
½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¾ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot.	
Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds per square foot .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot. 20c

Plates ordered 7.65 pounds per square foot .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c
Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.	

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet	No extra
Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

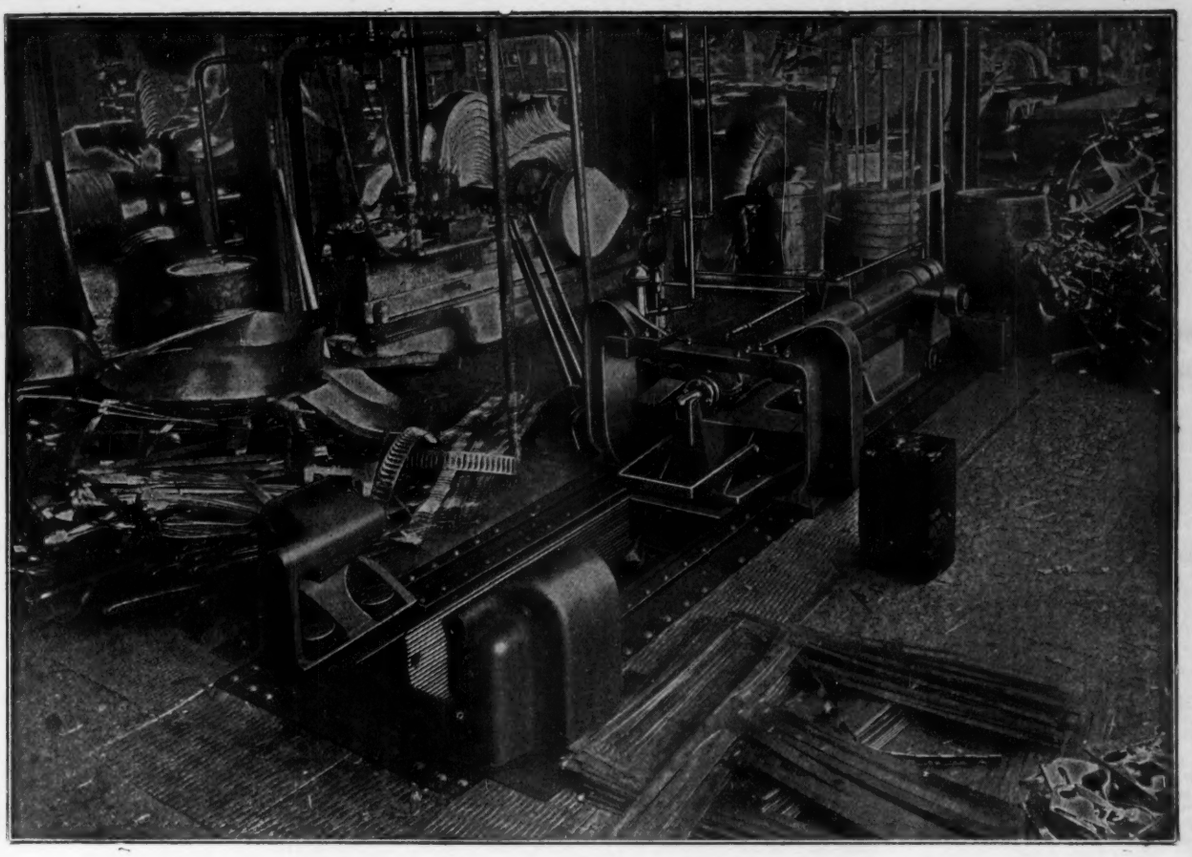
With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c



Typical Installation in Well-Known Automobile Plant

WHY SHEET-SCRAP CAN BE PROFITABLY COMPRESSED

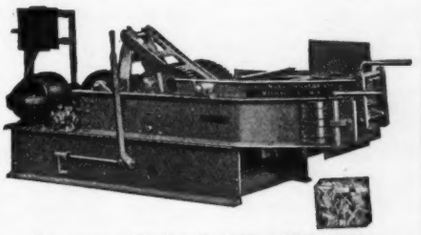
It commands at all times the best price;
It can be more conveniently stored;
It can be more economically handled;
It can be readily held for favorable markets;
It practically eliminates corrosion;
It permits of loading cars to capacity;
It saves much heat in remelting.

LOGEMANN SCRAP-METAL PRESSES

Hydraulic and Mechanical Types

LOGEMANN BROTHERS COMPANY
3126 Burleigh St. Milwaukee, Wis.

Also presses making crucible-size bricks of copper, brass, aluminum and other metals.



Logemann Mechanical-type Metal Baler

Please indicate character of scrap, quantity and heaviest gauge, when writing.

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A classified-by-products list of advertisers for the convenience of readers. If you don't find what you want, write us and we will tell you where to get it. ¶Index to advertisements will give you page number of any advertisers and by referring to advertisement you can get full particulars about products.

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Norton Co., Worcester, Mass.

ACCUMULATORS
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United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

ACETYLENE (Dissolved)
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACETYLENE GENERATORS
Air Reduction Sales Co., 342 Madison Ave., New York City.
Oxweld Acetylene Co., 30 E. 42nd St., New York City.

ACETYLENE IN CYLINDERS
Air Reduction Sales Co., 342 Madison Ave., New York City.
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACIDS (Pickling)
American Chemical Paint Co., Ambler, Pa.

ADAMITE ROLLS
American Adamite Co., The, 12th and Etna Sts., Pittsburgh, Pa.

AIR COMPRESSORS—See COMPRESSORS (Air)

AIR CUSHIONS (Power Press)
Marquette Tool & Mfg. Co., 1908 S. Kilbourne Ave., Chicago, Ill.

AIR FILTERS
Midwest Air Filters, Inc., Bradford, Pa.

ALLOYS
Electro Metallurgical Sales Corp., 30 E. 42nd St., New York City.
Lavino, E. J., & Co., Bullitt Bldg., Philadelphia, Pa.
Metal & Thermit Corp., 120 Broadway, New York City.
Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM
Leavitt, C. W., & Co., 30 Church St., New York City.
Rogers Brown & Crocker Bros., Inc., 21 E. 40th St., New York City.

ALUMINUM (Vanadium)
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM TUBING
Summerill Tubing Co., Bridgeport, Pa.

ANGLES, TEES, CHANNELS—See STEEL (Structural)

ANNEALING BOXES
Farrell-Cheek Steel Foundry Co., Sandusky, O.
Pittsburgh Annealing Box Co., 801 Beaver Ave., N.S., Pittsburgh, Pa.
Pittsburgh Malleable Iron Co., 34th and Smallman Sts., Pittsburgh Pa.
Riter-Conley Co., Oliver Bldg., Pittsburgh, Pa.
Smith, George H., Steel Casting Co., Milwaukee, Wis.
Union Steel Casting Co., 62nd and Butler Sts., Pittsburgh, Pa.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Zanesville Malleable Co., Zanesville, O.

APPRAISALS
McKee, Arthur G., & Co., 2422 Euclid Ave., Cleveland, O.

AXLES
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Champion Machine & Forging Co., The, 3675 E. 78th St., Cleveland, O.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
National Tube Co., Frick Bldg., Pittsburgh, Pa.

BABBITT METAL
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.

BALING PRESSES
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.

BAND SAWS (Metal Cutting)
Huther Bros. Saw Mfg. Co., 1190 University Ave., Rochester, N. Y.

BANDS AND HOOPS (Galvanized Strips)
Sharon Steel Hoop Co., Sharon, Pa.

BANDS (Iron)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Welded Iron and Steel)
Akron-Selle Co., Akron, O.

BAR BENDERS
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.

BARGES (Steel)
American Bridge Co., 71 Broadway, New York City.

BARRELS (Steel)
Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

BARROWS
Sterling Wheelbarrow Co., Milwaukee, Wis.

BARS (Alloy)
Armstrong, Sir W. G., Whitworth & Co., Ltd., Kinnaird House, Pall Mall East, London, S. W. 1, England.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Wheelock, Lovejoy & Co., Inc., 128 Sidney St., Cambridge, Mass.

BARS (Concrete Reinforcements)
Bethlehem Steel Co., Bethlehem, Pa.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
Ryerson, Jos. T., & Son., Inc., 16th and Rockwell Sts. Chicago, Ill.

BARS (Iron and Steel)
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Lockhart Iron & Steel Co., Pittsburgh, Pa.
Morris, Wheeler & Co., 30th and Locust Sts., Philadelphia, Pa.
Penn Iron & Steel Co., Creighton, Pa.

BARS (Steel)
Armstrong, Sir W. G., Whitworth & Co., Ltd., Kinnaird House, Pall Mall East, London, S. W. 1, England.
Bethlehem Steel Co., Bethlehem, Pa.
Bliss & Laughlin, Inc., Harvey, Ill.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
Republic Iron & Steel Co., Youngstown, O.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

BARS, STEEL (Electric Furnace)
Timken Roller Bearing Co., The, Canton, O.

BEAMS, CHANNELS, ANGLES, ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Blystone Mfg. Co., Ironton St., Cambridge Springs, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Phoenix Iron Co., The, 20 So. 15th St., Philadelphia, Pa.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.

BEARINGS (Ball)
Hoover Steel Ball Co., Ann Arbor, Mich.
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffman Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.
Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Tapered Roller)
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT FASTENERS
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.

BELT LACING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.

BELTING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.

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Kardong Bros., 346 Buchanan St., Minneapolis, Minn.
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Long & Allstatter Co., Hamilton, O.
Sutton Engineering Co., Park Bldg., Pittsburgh, Pa.

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